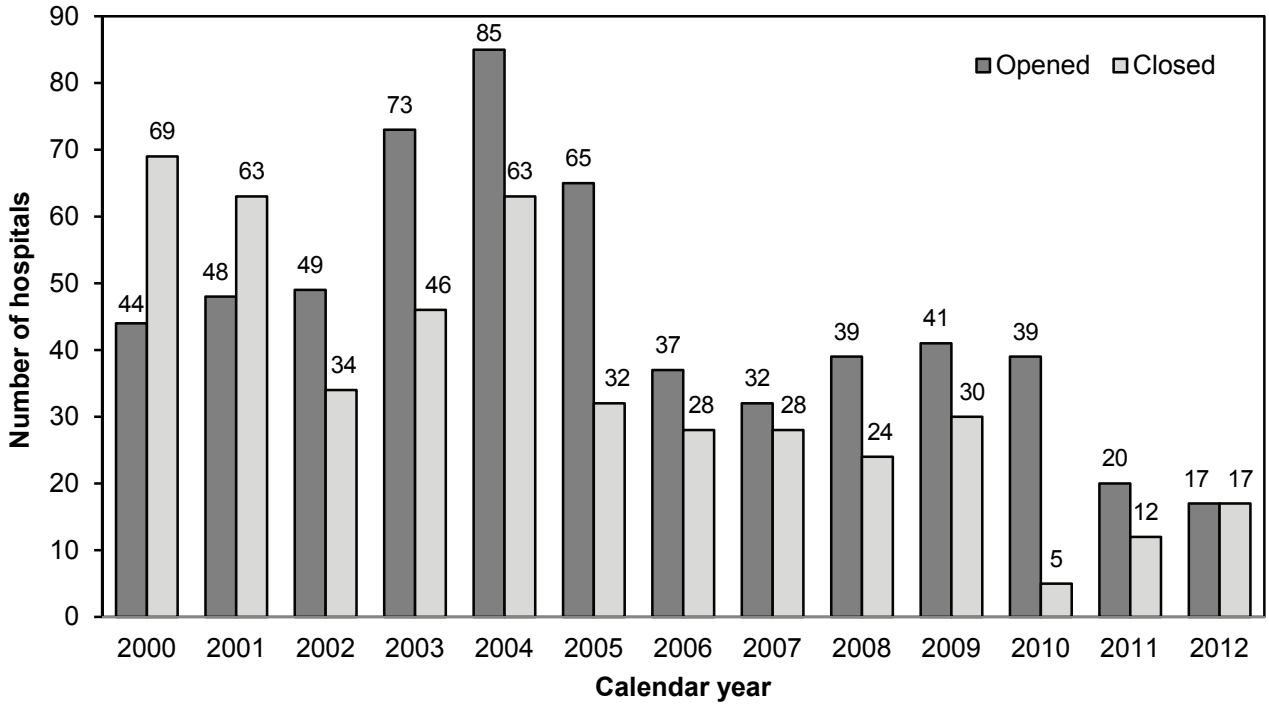
SECTION 6

Acute inpatient services

Short-term hospitals
Inpatient psychiatric facilities

Chart 6-1. Annual changes in number of acute care hospitals participating in the Medicare program, 2000–2012



Note: "Hospitals" refers to general short-term acute care hospitals. The Commission's reported number of open and closed hospitals can change from year to year based on hospitals that enter Medicare as acute care facilities and later convert to a more specialized type of facility, such as a long-term care hospital or critical access hospital.

Source: MedPAC analysis of CMS's Provider of Service file, inpatient prospective payment system final rule impact file, and hospital cost reports.

- The number of hospital openings was the same as the number of closures in 2012, with 17 acute care hospitals starting participation in the Medicare program and 17 terminating their participation.
- In 2012, more than 4,600 acute care hospitals (including critical access hospitals) participated in the Medicare program.

Chart 6-2. Percent change in hospital employment, by occupation, 2008–2012

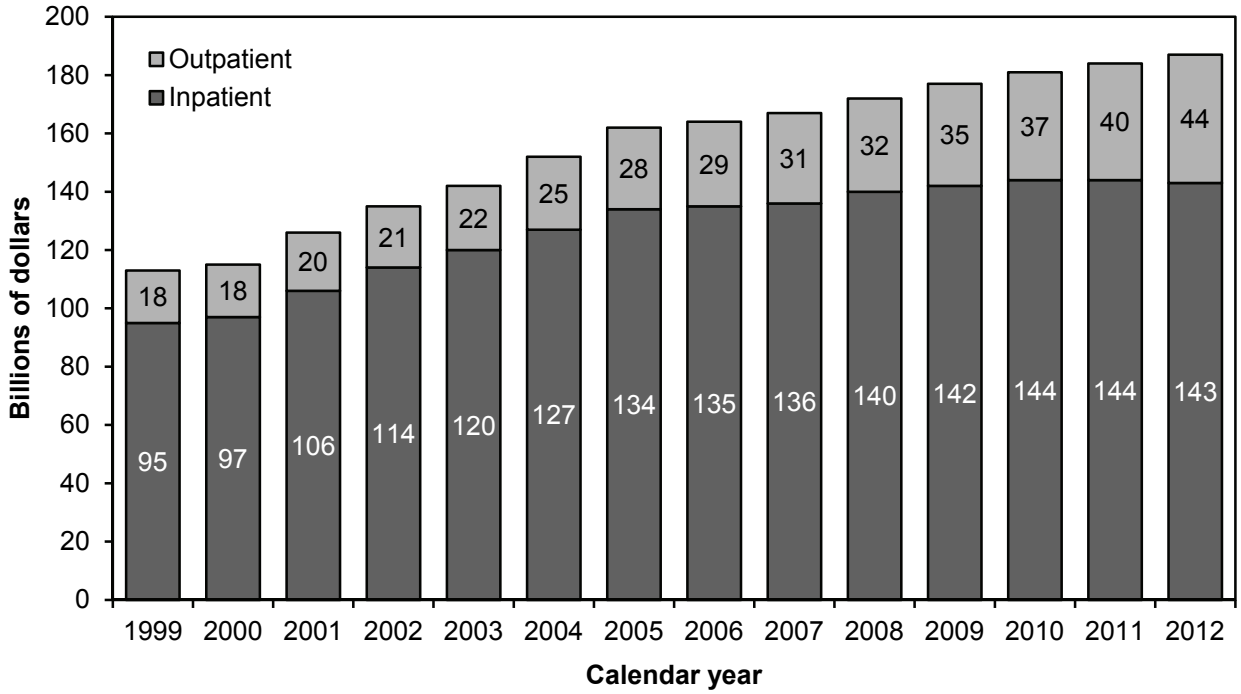
	Total U.S. employment (May 2008)	Total U.S. employment (May 2012)	Percent change in total employment (2008–2012)
All hospital occupations	5,096,190	5,236,960	2.8%
Surgeons (direct employment only)	5,730	7,250	26.5
Computer and math science	52,180	63,010	20.8
Internists (direct employment only)	8,100	9,690	19.6
Diagnostic sonographers	28,930	34,290	18.5
Life, physical, and social science	25,550	29,080	13.8
Business and finance	92,160	105,420	14.4
Pharmacists	55,530	61,460	10.7
Management	175,390	192,918	10.0
Physician assistants	16,820	18,380	9.3
Registered nurses	1,458,520	1,545,370	6.8
Radiation technologists	125,640	132,950	5.8
HC clinicians and technical	2,712,350	2,863,320	5.6
Community and social services (social work)	103,380	98,990	–4.3
LPNs/LVNs	163,360	124,400	–23.9

Note: HC (health care), LPN (licensed practical nurse), LVN (licensed vocational nurse).

Source: MedPAC analysis of Bureau of Labor Statistics, Occupational Employment Statistics data set as of September 2013.

- From May 2008 to May 2012, hospital employment increased 2.8 percent. By the end of this period, the hospital sector employed over 5.2 million individuals.
- Six occupations with notable growth in the hospital sector from 2008 to 2012 include surgeons employed directly by hospitals (26.5 percent); computer and math science positions (20.8 percent); internists directly employed by hospitals (19.6 percent); diagnostic sonographers (18.5 percent); business and finance positions (14.4 percent); and life, physical, and social science positions (13.8 percent). Growth in the two physician groups suggests that hospitals have been more active in recent years in hiring physicians directly. Growth in computer and math science positions, in particular, may reflect hospitals' efforts to implement electronic health record systems.
- LPNs and LVNs, as well as community and social service positions (social workers), were among the few occupations to experience a decline in the number of individuals employed by hospitals from 2008 to 2012, declining by 23.9 percent and 4.3 percent, respectively. During the same time period, the number of registered nurses employed by hospitals increased 6.8 percent (86,850 registered nurses), suggesting a continued shift toward employing nurses with a higher level of training.

Chart 6-3. Growth in Medicare's FFS payments for hospital inpatient and outpatient services, 1999–2012



Note: FFS (fee-for-service). Analysis includes inpatient services covered by the acute inpatient prospective payment system (PPS); psychiatric, rehabilitation, long-term care, cancer, and children's hospitals and units; outpatient services covered by the outpatient PPS; and other outpatient services. Payments include program outlays and beneficiary cost sharing. The growth in spending was slowed in 2006 by increases in the number of Medicare Advantage enrollees, who are not included in these aggregate totals.

Source: CMS, Office of the Actuary.

- Aggregate Medicare FFS inpatient spending was $143 billion and outpatient spending was $44 billion in 2012. From 2011 to 2012, inpatient spending decreased about 1 percent, while outpatient spending increased about 9 percent.

- A freeze in inpatient payment rates in the Balanced Budget Act of 1997 reduced growth in inpatient spending from 1999 to 2000. Spending increased substantially between 2001 and 2005, but remained relatively unchanged from 2005 to 2007, in part because traditional FFS Medicare enrollment declined in each of these three years due to a large number of beneficiaries switching to the Medicare Advantage program. Payment growth began to increase in 2008 for inpatient and particularly outpatient services.

- Outpatient spending has increased as a share of total Medicare hospital-based spending in the past 13 years. In 1999, outpatient spending accounted for almost 16 percent of all hospital spending; in 2012, outpatient spending grew to approximately 24 percent of total Medicare hospital spending.

- Outpatient spending per FFS beneficiary was about $1,397 in 2012, up from approximately $590 in 1999, an increase of 137 percent.

Chart 6-4. Proportion of Medicare acute care hospital inpatient discharges by hospital group, 2012

	Hospitals		Medicare discharges	
Hospital group	Number	Share of total	Number (thousands)	Share of total
All PPS hospitals and CAHs	4,630	100.0%	10,319	100.0%
CAHs	1,325	28.6	361	3.5
PPS hospitals	3,305	71.4	9,958	96.5
Urban (PPS hospitals)	2,388	72.3	8,651	86.9
Large urban	1,305	39.5	4,725	47.5
Other urban	1,083	32.8	3,926	39.4
Rural (PPS hospitals)	917	27.7	1,307	13.1
Rural referral	123	3.7	365	3.7
Sole community	383	11.6	542	5.4
Medicare dependent	192	5.8	179	1.8
Other rural < 50 beds	92	2.8	44	0.4
Other rural ≥ 50 beds	127	3.8	177	1.8
Tax status (PPS hospitals)				
Voluntary	1,931	58.4	7,097	71.3
Proprietary	811	24.5	1,583	15.9
Government	563	17.0	1,278	12.8
Teaching status (PPS hospitals)				
Major teaching	265	8.0	1,560	15.7
Other teaching	741	22.4	3,628	36.4
Nonteaching	2,299	69.6	4,770	47.9

Note: PPS (prospective payment system), CAH (critical access hospital). Maryland hospitals are excluded. Large urban areas are those with populations of more than 1 million. Major teaching hospitals are defined by a ratio of interns and residents to beds of at least 0.25. Other teaching hospitals have a ratio below 0.25. Data are limited to providers with complete 2012 cost reports in the CMS database. See Chart 6-28 for more information about CAHs. Hospitals in urban, rural, tax status, and teaching status categories are all PPS hospitals. Numbers may not sum to totals due to rounding.

Source: MedPAC analysis of PPS impact files and Medicare cost report data from CMS.

- In 2012, 3,305 hospitals provided 10 million discharges under Medicare's acute inpatient PPS, and 1,325 CAHs provided about 360,000 discharges. The number of PPS discharges continued to decline from 2011 to 2012, in part because of a shift in services from the inpatient to the outpatient setting.
- Approximately 21 percent of PPS hospitals are covered by three special payment provisions (rural referral centers (RRCs), sole community hospitals (SCHs), and small rural Medicare-dependent hospitals (MDHs)) intended to help rural facilities that are not CAHs; these facilities account for about 11 percent of all discharges.
- About 90 percent of rural hospitals were CAHs, SCHs, MDHs, or RRCs in 2012. Collectively, these four types of hospitals provide 87 percent of all rural Medicare discharges (not shown in chart).

Chart 6-5. Major diagnostic categories with highest volume, fiscal year 2012

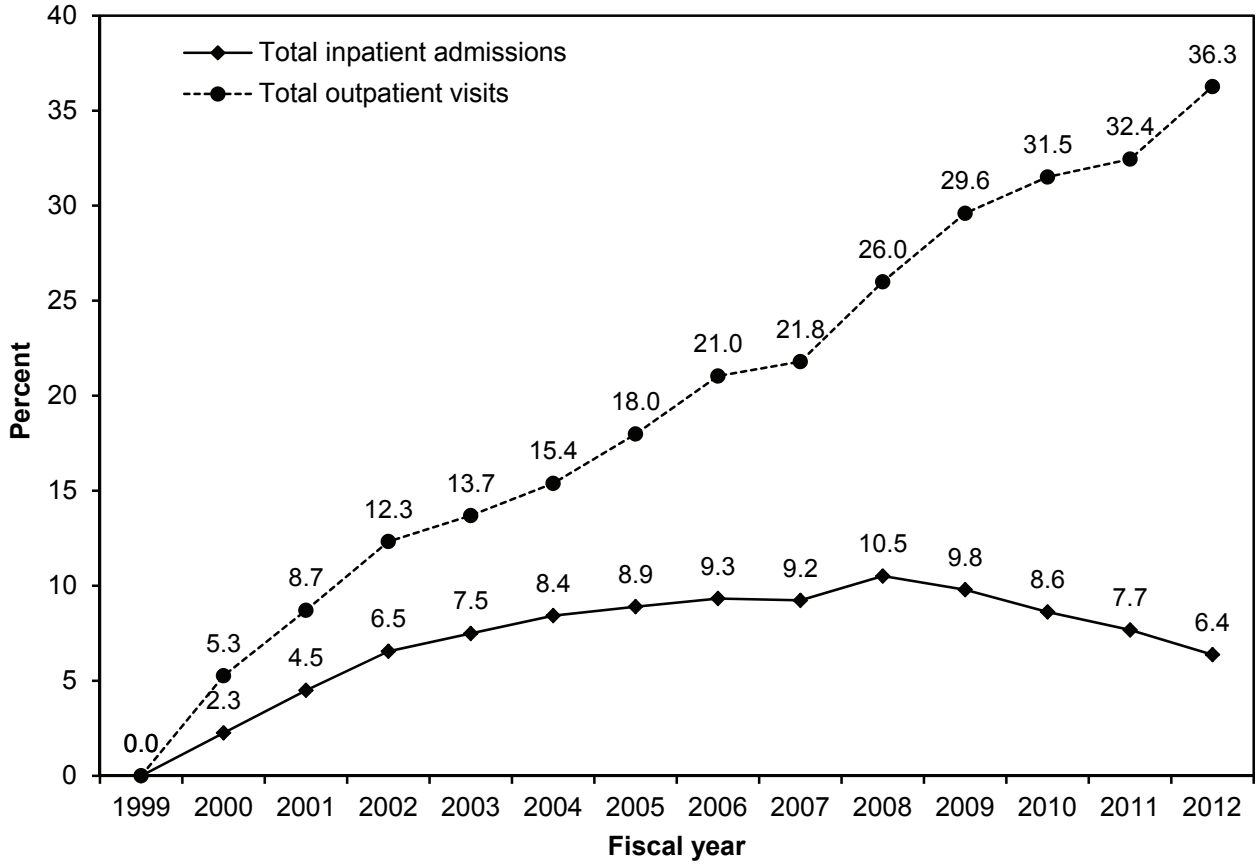
MDC number	MDC name	Share of all discharges	Share of medical discharges	Share of surgical discharges
5	Circulatory system	22%	21%	24%
4	Respiratory system	15	19	3
8	Musculoskeletal system and connective tissue	13	4	38
6	Digestive system	11	11	10
1	Nervous system	8	9	5
11	Kidney and urinary tract	8	9	4
18	Infectious and parasitic diseases	6	7	3
10	Endocrine, nutritional, and metabolic diseases and disorders	4	4	2
7	Hepatobiliary system and pancreas	3	3	4
9	Skin, subcutaneous tissue, and breast	3	3	2
	Total	93	90	95

Note: MDC (major diagnostic category). Numbers may not sum to totals due to rounding.

Source: MedPAC analysis of Medicare Provider Analysis and Review data from CMS.

- In fiscal year 2012, 10 major diagnostic categories accounted for 93 percent of all discharges from hospitals paid under the acute inpatient prospective payment system.
- Circulatory system cases accounted for about one-quarter of surgical cases.
- Respiratory system cases accounted for 19 percent of medical discharges.
- Musculoskeletal system cases accounted for 38 percent of surgical discharges.

Chart 6-6. Cumulative change in total all-payer inpatient admissions and total outpatient visits, 1999–2012

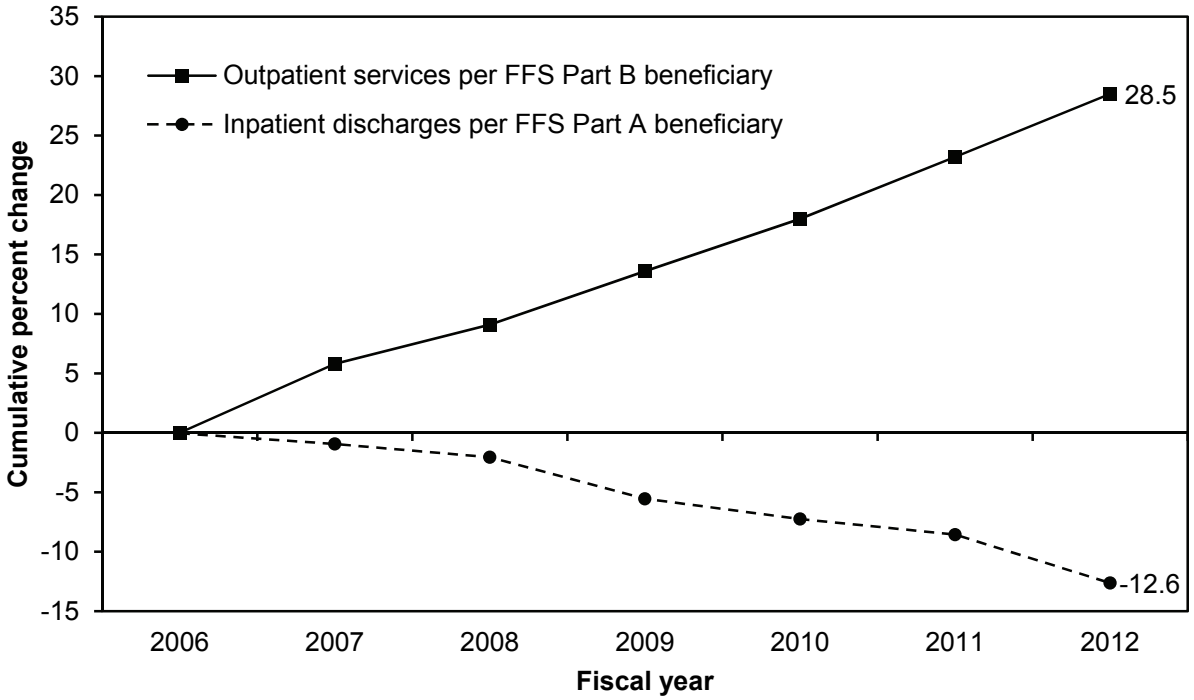


Note: Cumulative change is the total percent increase from 1999 through 2012. Data are admissions (all payers) to and outpatient visits at about 5,000 community hospitals.

Source: American Hospital Association, AHA Hospital Statistics.

- In 2012, community hospitals provided nearly 675 million outpatient visits and slightly fewer than 34 million inpatient admissions (data not shown in chart).
- Hospital outpatient service use grew much more rapidly from 1999 to 2012 than inpatient service use. Total hospital outpatient visits increased about 36 percent from 1999 to 2012.
- Outpatient visits increased nearly 4 percentage points from 2011 to 2012, or nearly 19 million visits.
- Total inpatient admissions grew by over 10 percent between 1999 and 2008, but have since declined. Inpatient admissions decreased by 1.3 percentage points from 2011 to 2012, or over 400,000 admissions.

Chart 6-7. Cumulative change in Medicare outpatient services and inpatient discharges per FFS beneficiary, 2006–2012

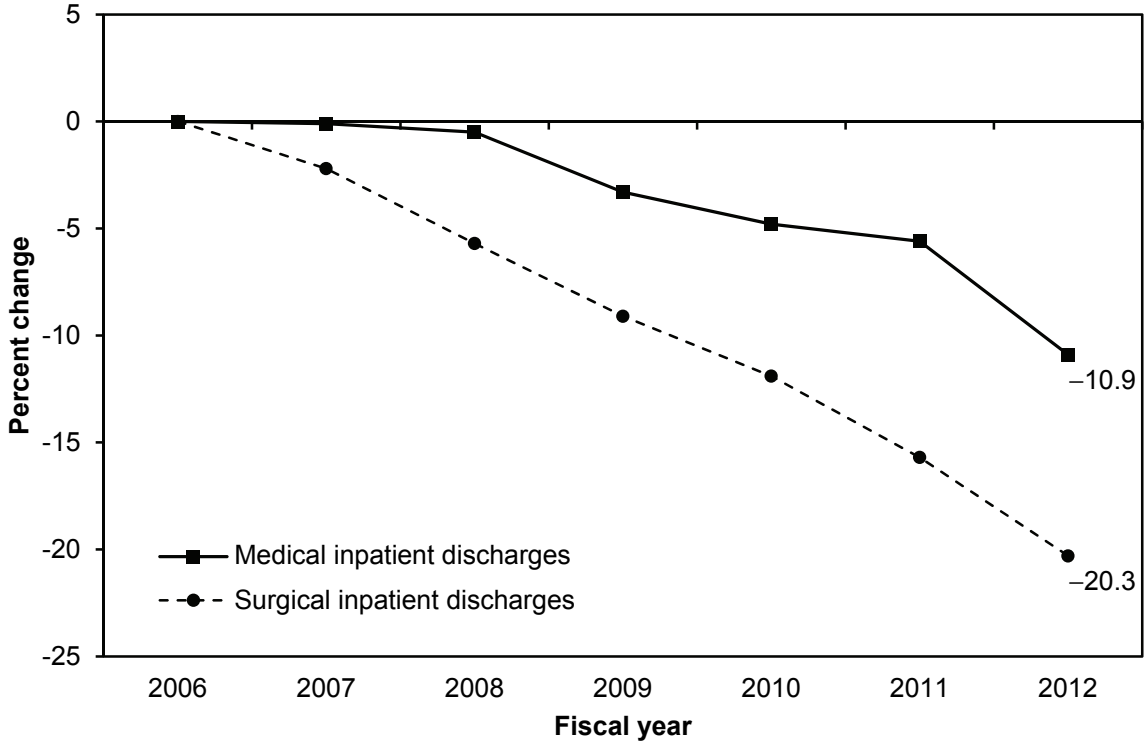


Note: FFS (fee-for-service). Data are for short-term general and surgical hospitals, including critical access and children's hospitals.

Source: MedPAC analysis of Medicare Provider Analysis and Review and hospital outpatient claims data from CMS.

- From 2006 to 2012, the number of Medicare inpatient discharges per FFS beneficiary declined by 12.6 percent. From 2006 to 2007, inpatient volume per beneficiary was relatively flat, but, beginning in 2008, the volume of discharges began to decline more rapidly.
- From 2006 to 2012, the number of outpatient services per FFS beneficiary increased 28.5 percent.
- Together, these two trends suggest a shift in services from the inpatient to the outpatient setting, as well as other separate trends in increasing outpatient utilization and decreasing inpatient utilization.
- From 2011 to 2012, the number of Medicare inpatient discharges per FFS beneficiary declined approximately 4 percentage points, or more than double the average annual decline from 2006 to 2011.
- From 2011 to 2012, the number of Medicare outpatient services per FFS beneficiary increased approximately 5 percentage points, or at about the same rate as the average annual increase from 2006 to 2011.

Chart 6-8. Cumulative change in Medicare inpatient medical and surgical discharges per FFS beneficiary, 2006–2012



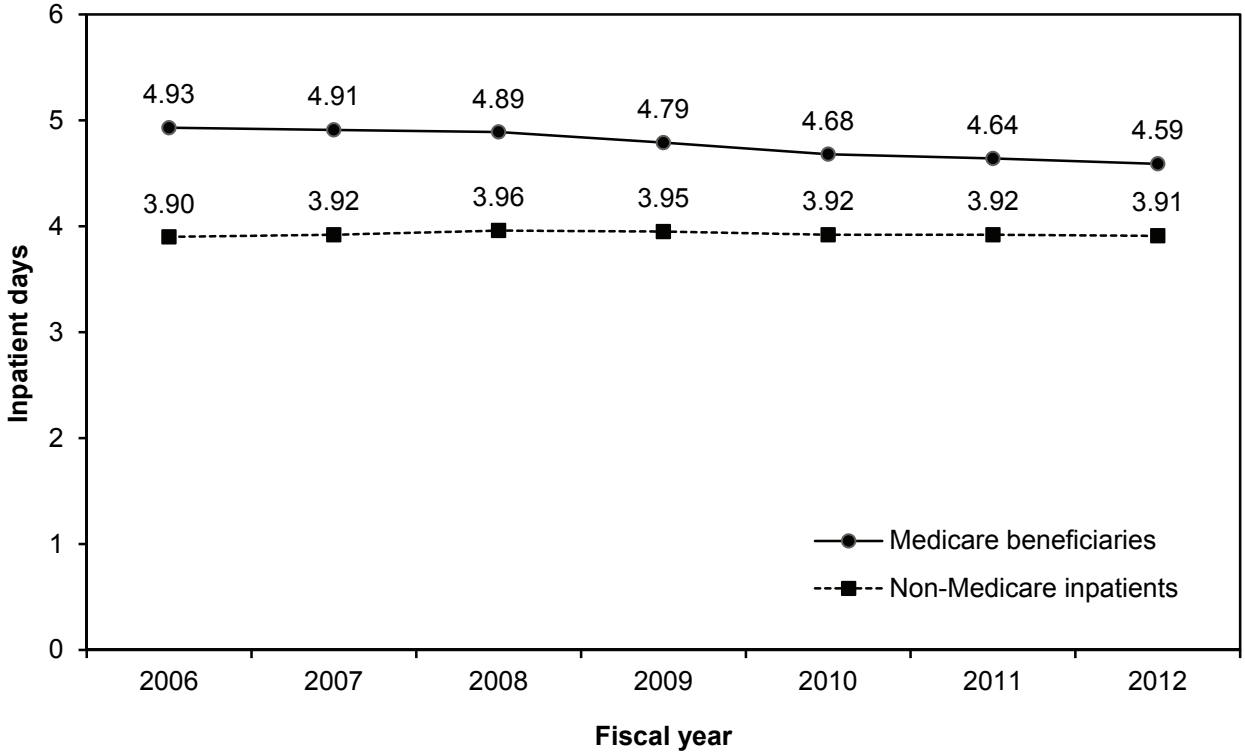
Note: FFS (fee-for-service). Data are for short-term general and surgical hospitals, including critical access and children's hospitals.

Source: MedPAC analysis of Medicare Provider Analysis and Review data from CMS.

- From 2006 to 2012, inpatient surgical discharges per beneficiary declined approximately 20 percent, or an average of slightly more than 3 percent per year. Over the same period, inpatient medical discharges per beneficiary declined approximately 11 percent, or an average of slightly less than 2 percent per year.

- In the most recent year for which data are available, inpatient surgical discharges and inpatient medical discharges shifted away from the inpatient setting at equal rates. From 2011 to 2012, both inpatient surgical and medical discharges per beneficiary declined approximately 5.5 percent.

Chart 6-9. Trends in Medicare inpatient and non-Medicare inpatient length of stay, 2006–2012

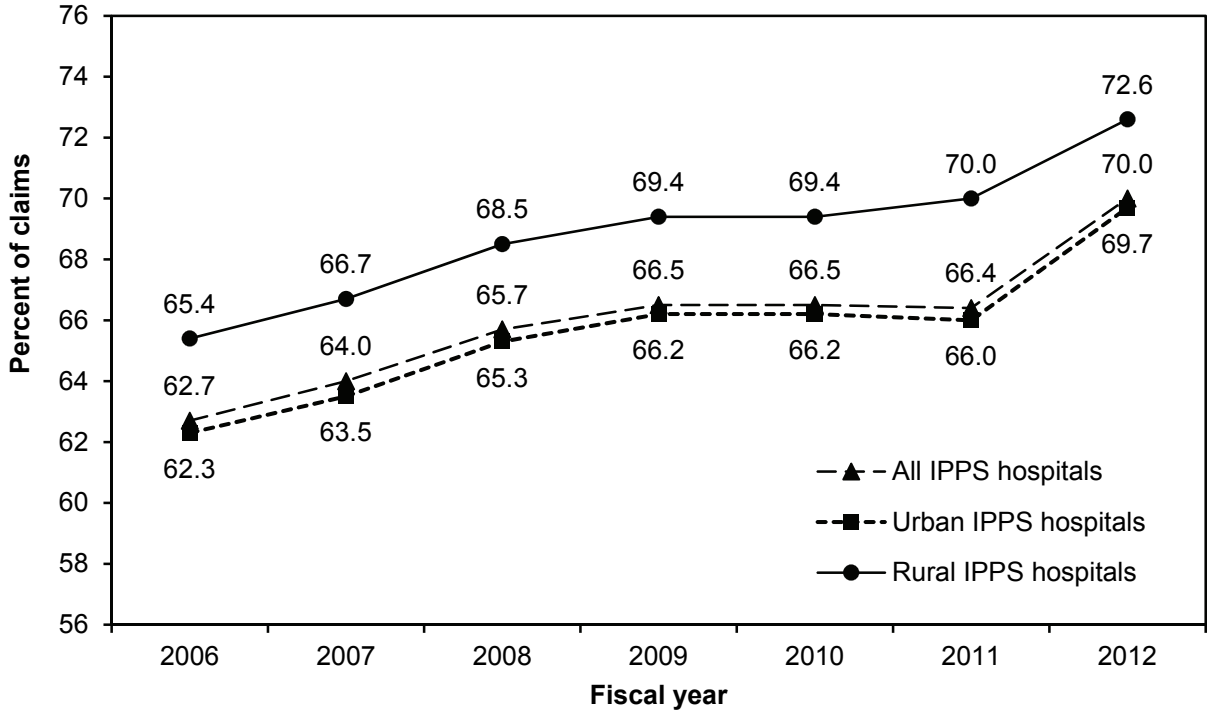


Note: Length of stay was calculated for more than 3,000 hospitals covered by the acute inpatient prospective payment system. Chart excludes critical access hospitals.

Source: MedPAC analysis of Medicare cost report data from CMS.

- Average length of inpatient stay for Medicare beneficiaries was nearly one day longer than for non-Medicare inpatients in 2012.
- Average length of inpatient stay for Medicare beneficiaries fell nearly 7 percent, from 4.93 days in 2006 to 4.59 days in 2012. Medicare length of stay declined at an average annual rate of approximately 1.2 percent during this period.
- Average length of stay for all non-Medicare inpatients remained nearly unchanged at 3.9 days between 2006 and 2012.

Chart 6-10. Share of inpatient admissions preceded by emergency department visit by location, 2006–2012



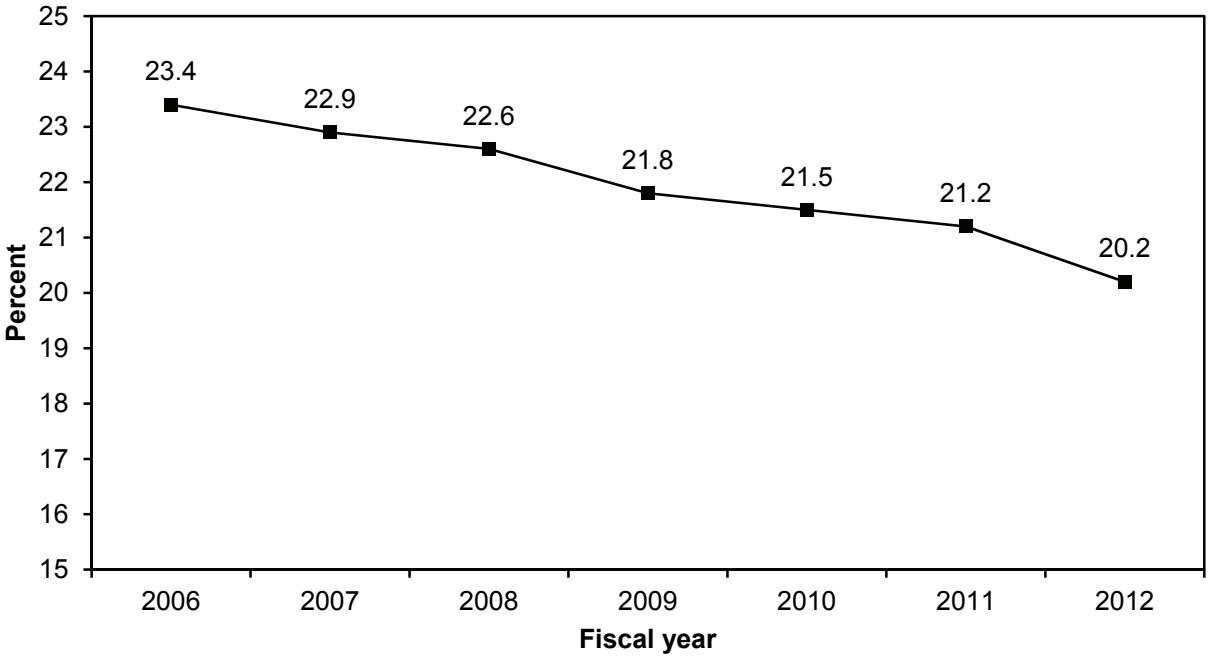
Note: IPPS (inpatient prospective payment system).

Source: MedPAC analysis of Medicare Provider Analysis and Review data from CMS.

- Across all IPPS hospitals, the share of inpatient admissions preceded by an emergency department visit increased from 62.7 percent to 70.0 percent from 2006 to 2012, an increase of 7.3 percentage points. The 3.6 percentage point increase in the share of inpatient admissions preceded by an emergency department visit between 2011 and 2012 was the result of a decrease of 225,000 inpatient admissions preceded by an emergency department visit and a decrease of 438,000 inpatient admissions overall.

- The share of inpatient admissions preceded by an emergency department visit is consistently higher for rural hospitals than for urban hospitals. In 2012, approximately 73 percent of inpatient admissions provided at rural hospitals were preceded by an emergency department visit. By contrast, approximately 70 percent of inpatient admissions provided at urban hospitals were preceded by an emergency department visit.

Chart 6-11. Share of Medicare Part A fee-for-service beneficiaries with at least one hospitalization, 2006–2012



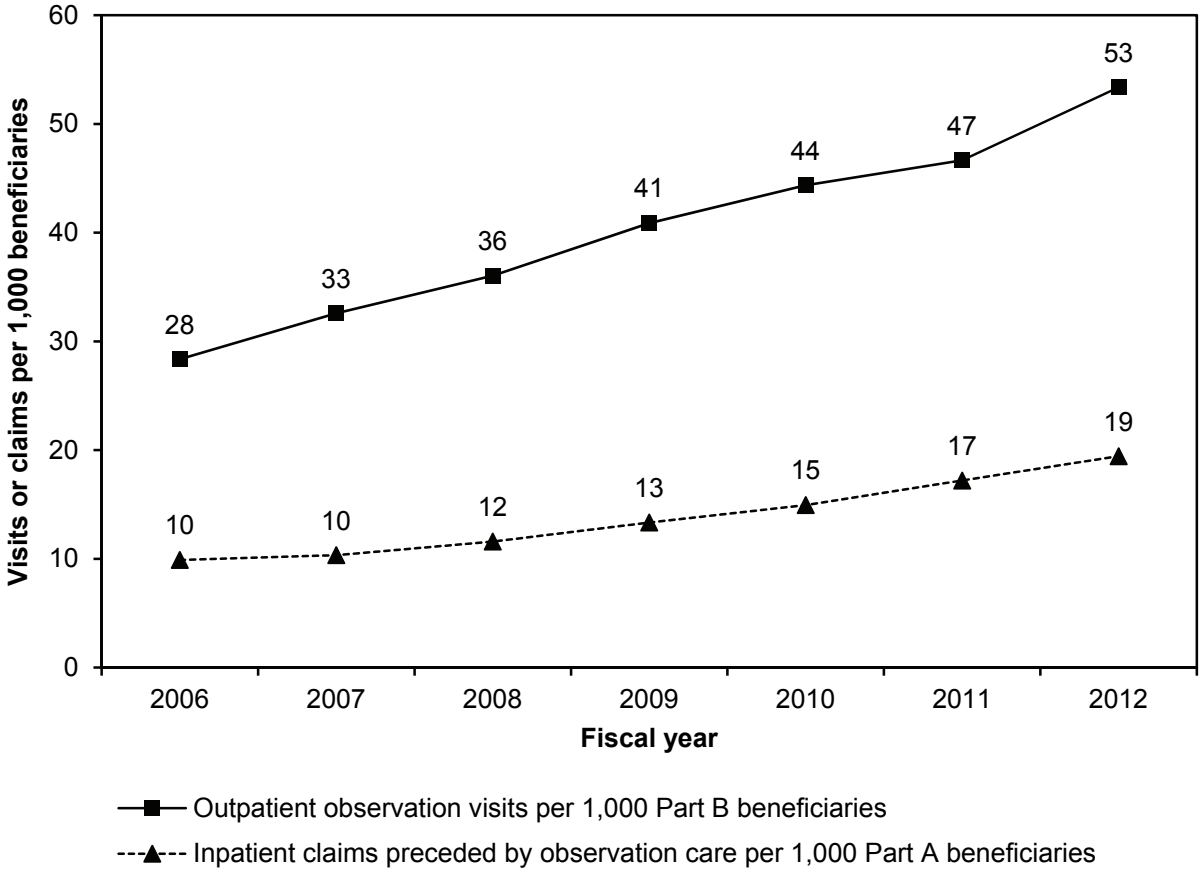
Note: Analysis excludes Medicare Advantage claims and claims for non–inpatient prospective payment system hospitals, such as critical access hospitals and hospitals located in Maryland.

Source: MedPAC analysis of Medicare Provider Analysis and Review data from CMS.

- The share of Medicare fee-for-service beneficiaries with Part A coverage who had at least one inpatient hospitalization in a given year declined by over 3 percentage points from 2006 to 2012. In 2012, 20.2 percent of Medicare beneficiaries had at least one inpatient stay covered under Part A.

- A portion of the decline in beneficiaries' use of inpatient services could reflect the increase in the number of cases in which beneficiaries are served in outpatient observation status. In addition, this decline could also represent, in part, a general long-term trend in reduced inpatient use.

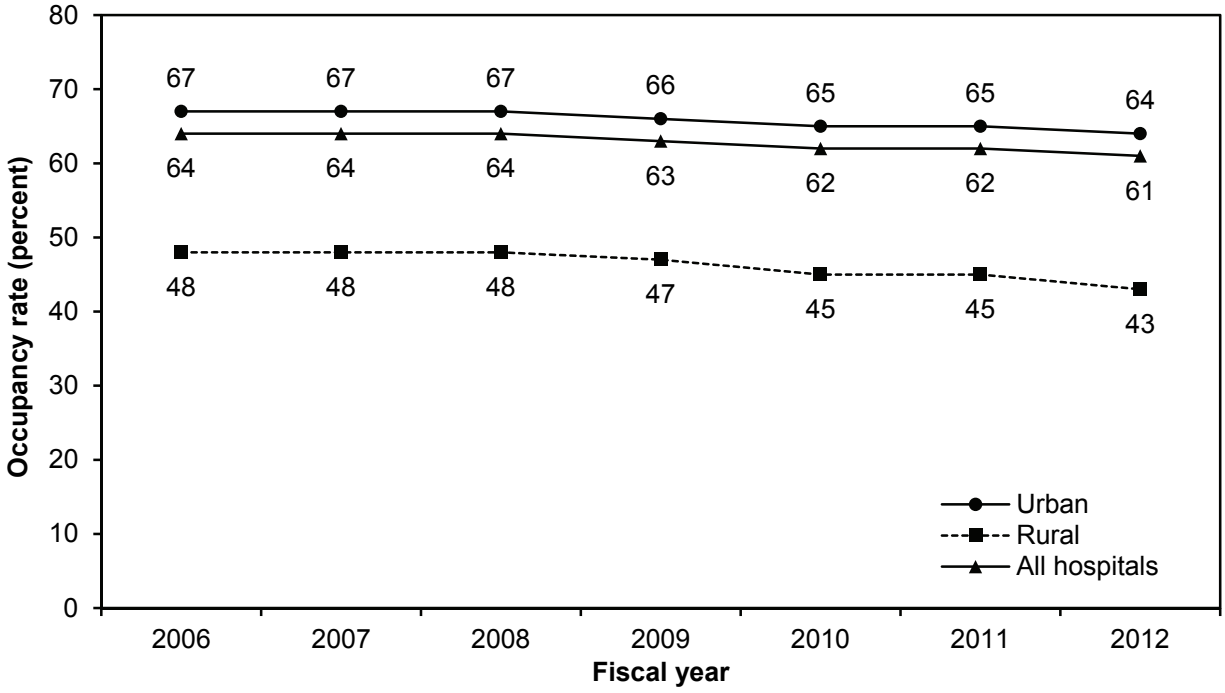
Chart 6-12. Number of Medicare outpatient observation visits and inpatient claims preceded by observation care per 1,000 beneficiaries increased from 2006 to 2012



Source: Medicare hospital cost reports and Medicare outpatient claims data.

- Hospitals use observation care to determine whether a patient should be hospitalized for inpatient care, transferred to an alternative treatment setting, or sent home.
- The number of Medicare outpatient observation visits increased approximately 88 percent from 2006 to 2012. During this period, the rate of outpatient observation visits per Part B beneficiary increased from approximately 28 visits per 1,000 beneficiaries to 53 visits per 1,000 beneficiaries.
- The number of Medicare inpatient admissions preceded by observation care increased approximately 97 percent from 2006 to 2012, jumping from 10 inpatient admissions preceded by observation per 1,000 Part A beneficiaries to 19 per 1,000 beneficiaries.

Chart 6-13. Hospital occupancy rates, 2006–2012



Note: Hospital occupancy rates were calculated as total bed days used (including swing bed days used) and observation bed days used, minus nursery bed days used, over total bed days available. A consistent cohort of approximately 3,300 prospective payment system and critical access hospitals was used in this analysis.

Source: MedPAC analysis of Medicare's Hospital Cost Reports.

- In the aggregate, hospital occupancy rates have been relatively stable over the past decade but have edged down slightly in more recent years as total inpatient admissions have fallen. In 2012, occupancy rates were 61 percent across all hospitals, their lowest level in the past seven years.

- Occupancy rates are generally higher for urban than for rural hospitals. In 2012, the aggregate occupancy rate for urban hospitals was 64 percent, whereas the aggregate occupancy rate for rural hospitals was 43 percent.

- Occupancy rates vary across markets and within markets. For example, the average occupancy rate for hospitals in Boston, MA, was 68 percent in 2012, compared with an average occupancy rate of 49 percent for hospitals in Dallas, TX. In addition, individual hospital occupancy rates within geographic areas vary from 30 percent to over 90 percent in Atlanta, GA, and from 30 percent to 90 percent in Denver, CO.

Chart 6-14. Medicare inpatient payments, by source and hospital group, 2012

Hospital group	Percent of total payments					Total payments (millions)
	Base	IME	DSH	Outlier	Additional rural hospital*	
All hospitals	79.6%	5.0%	9.6%	4.0%	1.9%	$110,423
Urban	79.4	5.5	10.1	4.3	0.8	99,484
Rural	82.0	0.8	4.8	1.2	11.8	10,938
Large urban	77.9	6.7	10.6	4.6	0.2	57,326
Other urban	81.4	3.8	9.4	3.8	1.7	42,156
Rural referral	87.7	1.1	7.4	2.2	1.5	3,126
SCH (federal rate)	84.0	3.3	7.9	1.7	3.2	1,253
SCH (HSP rate)	73.5	0.1	0.0	0.3	26.2	3,757
Medicare dependent	80.3	0.0	7.2	1.0	11.6	1,292
Other rural < 50 beds	82.6	0.2	6.3	1.1	10.4	303
Other rural ≥ 50 beds	88.2	0.5	6.9	1.4	3.0	1,210
Voluntary	80.3	5.3	8.8	4.0	1.8	78,721
Proprietary	82.6	1.9	11.1	3.3	1.2	17,395
Government	72.6	7.3	12.1	4.8	3.3	14,307
Major teaching	65.7	15.9	12.3	5.9	0.2	25,949
Other teaching	81.7	3.6	9.7	3.7	1.4	39,440
Nonteaching	85.9	0.0	7.9	3.1	3.3	45,033

Note: IME (indirect medical education), DSH (disproportionate share hospital), SCH (sole community hospital), HSP (hospital-specific payment [rate]). Chart includes all hospitals covered by Medicare's acute inpatient prospective payment system and excludes direct graduate medical education payments. Simulated payments reflect 2012 payment rules applied to actual number of cases in 2012. Chart excludes critical access hospitals. The Medicare-dependent hospital category includes facilities paid at either the HSP or the federal rate. Rows may not sum due to rounding.
*Additional rural hospital payments are the total payments made to hospitals beyond the federal base rate. This category includes rural add-on payments such as the SCH add-on, the Medicare-dependent hospital add-on, the expanded low-volume add-on, and the low-spending county add-on mandated by the Patient Protection and Affordable Care Act of 2010. For SCHs paid the HSP, this category also includes the payments hospitals receive that are indirectly attributable to the costs associated with residency programs, low-income patients, and outlier cases.

Source: MedPAC analysis of claims and impact file data from CMS.

- Medicare inpatient payments in 2012 to hospitals covered by the acute inpatient prospective payment system (IPPS) exceeded $110 billion. About $99.5 billion (90 percent) went to urban hospitals and $10.9 billion went to rural hospitals. This figure does not reflect $2.8 billion in payments to critical access hospitals (CAHs) for inpatient care. Cost-based reimbursement for CAHs results in payments that are significantly above what CAHs would have been paid under the IPPS.

- Special payments—which include IME, DSH, and outlier payments, as well as additional payments to rural hospitals through the SCH and Medicare-dependent hospital programs—account for 20.5 percent of all inpatient payments.

- Additional rural hospital payments increased in 2011 and 2012 because of two temporary provisions in the Patient Protection and Affordable Care Act of 2010. These provisions expanded the existing low-volume hospital add-on policy and created a new add-on policy for hospitals in counties with low levels of Medicare spending. In 2012, the expanded low-volume add-on amounted to approximately $300 million in additional payments to hospitals.

- Outlier payments accounted for 4.0 percent of total inpatient payments in 2012. The legislatively specified calculation (outlier payments as a ratio of outlier payments to base payments plus outlier payments) produced an outlier share of 4.9 percent of IPPS payments in fiscal year 2012, slightly lower than the CMS goal of 5.1 percent.

Chart 6-15. Discharge destination of Medicare fee-for-service beneficiaries, 2006–2012

Destination	2006	2009	2012	Percent change 2006 to 2012
Home–self care	52.3%	50.1%	48.0%	–4.3%
Skilled nursing or swing bed	18.8	19.8	20.3	1.5
Home with organized home health care	13.8	15.2	15.9	2.1
Inpatient rehabilitation facility	3.4	3.3	3.5	0.1
Long-term care hospital	0.9	1.1	1.2	0.3
Inpatient psychiatric facility	0.4	0.5	0.5	0.1
Hospice	1.6	2.1	2.7	1.0
Other setting (e.g., ICF, nursing facility)	2.0	1.6	1.7	–0.3
Transferred to other acute care hospital	2.5	2.2	2.2	–0.3
Left against medical advice	0.6	0.7	0.8	0.1
Died in hospital	3.8	3.5	3.3	–0.5

Note: ICF (Intermediate care facility).

Source: Medicare inpatient claims data.

- In 2012, slightly less than half of all Medicare fee-for-service patients were discharged from an acute care hospital to home under self-care, without any organized post-acute care. The share of beneficiaries discharged home under self-care has decreased since 2006, with greater use of different post-acute care providers, particularly home health care, skilled nursing care, and hospice.

- About one in five beneficiaries are discharged to skilled nursing care, ether in a SNF or hospital swing bed. The share of beneficiaries discharged to SNF-level care increased 1.5 percentage points between 2006 and 2012.

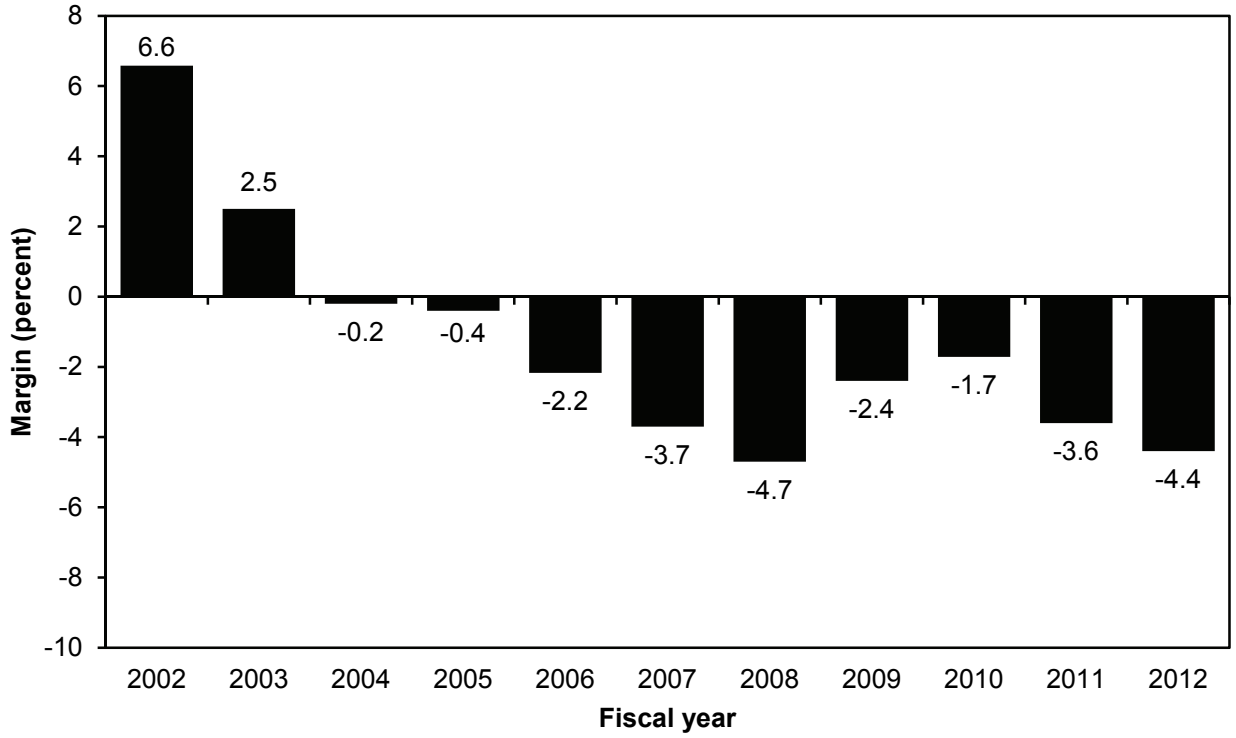
- An increasing share of beneficiaries are also being discharged home with organized home health care, going from 13.8 percent of discharges in 2006 to 15.9 percent in 2012.

- About 5 percent of beneficiaries are discharged to hospital-level post-acute care in an inpatient rehabilitation facility (3.5 percent), long-term care hospital (1.2 percent), or inpatient psychiatric facility (0.5 percent).

- Discharges to hospice care have shown substantial growth, rising from 1.6 percent of discharges in 2006 to 2.7 percent of discharges in 2012. A little more than half of these hospice discharges are to medical facility–level care rather than to home care.

- The share of patients dying in the hospital or being transferred to another acute care hospital has been declining.

Chart 6-16. Medicare acute inpatient PPS margin, 2002–2012



Note: PPS (prospective payment system). A margin is calculated as revenue minus costs, divided by revenue. Data are based on Medicare-allowable costs and exclude critical access hospitals. "Medicare acute inpatient margin" includes services covered by the acute care inpatient PPS. Maryland hospitals are excluded from this analysis.

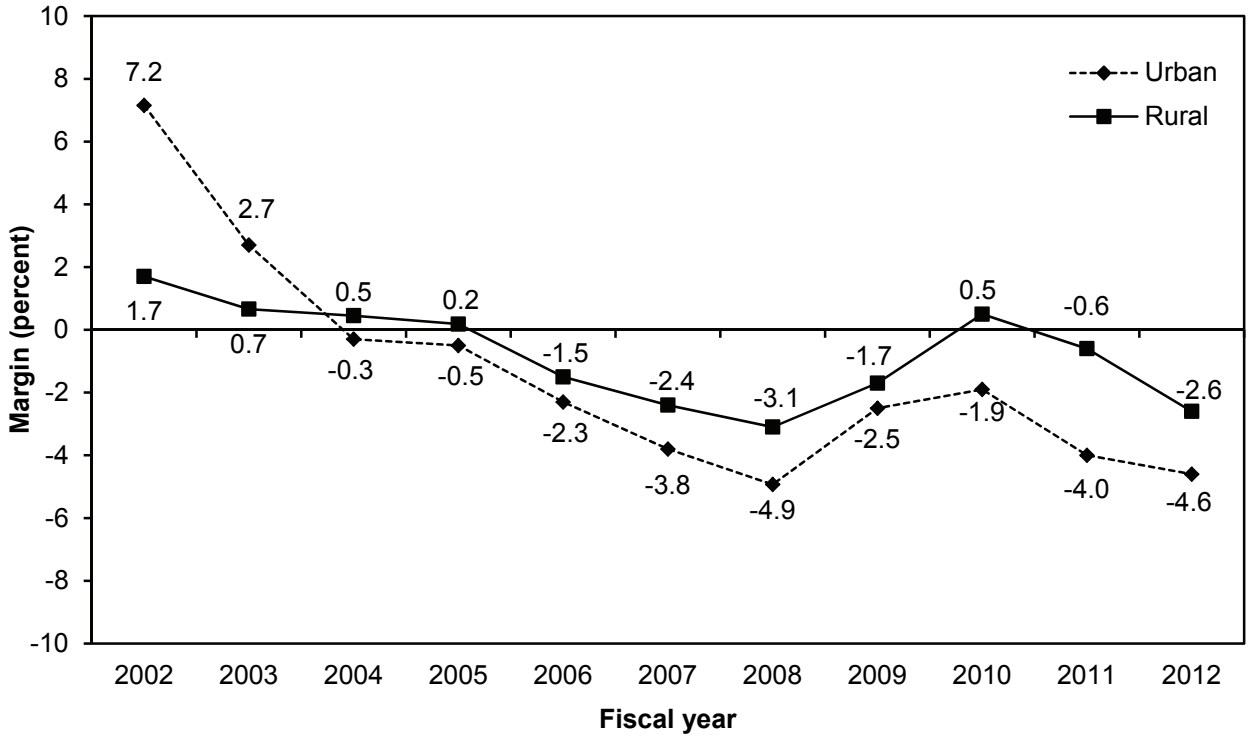
Source: MedPAC analysis of Medicare cost report data from CMS.

- Medicare's acute inpatient margin reflects payments and costs for services covered by Medicare's inpatient hospital PPS. The inpatient margin may be influenced by how hospitals allocate overhead costs across service lines. Only by combining data for all major services can we estimate Medicare costs without the potential influence of how overhead costs are allocated (see Chart 6-18).

- Following implementation of the Balanced Budget Act of 1997, inpatient margins declined over the next 10 years as costs rose faster than the 3 percent average annual increase in Medicare payments. In 2012, the margin was –4.4 percent, down from –3.6 percent in 2011.

- Medicare inpatient margins vary widely. In 2012, one-quarter of hospitals had Medicare inpatient margins that were 6.4 percent or higher, and another one-quarter had inpatient margins that were –19.0 percent or lower. Thirty-eight percent of hospitals had positive inpatient Medicare margins in 2012.

Chart 6-17. Medicare acute inpatient PPS margin, by urban and rural location, 2002–2012



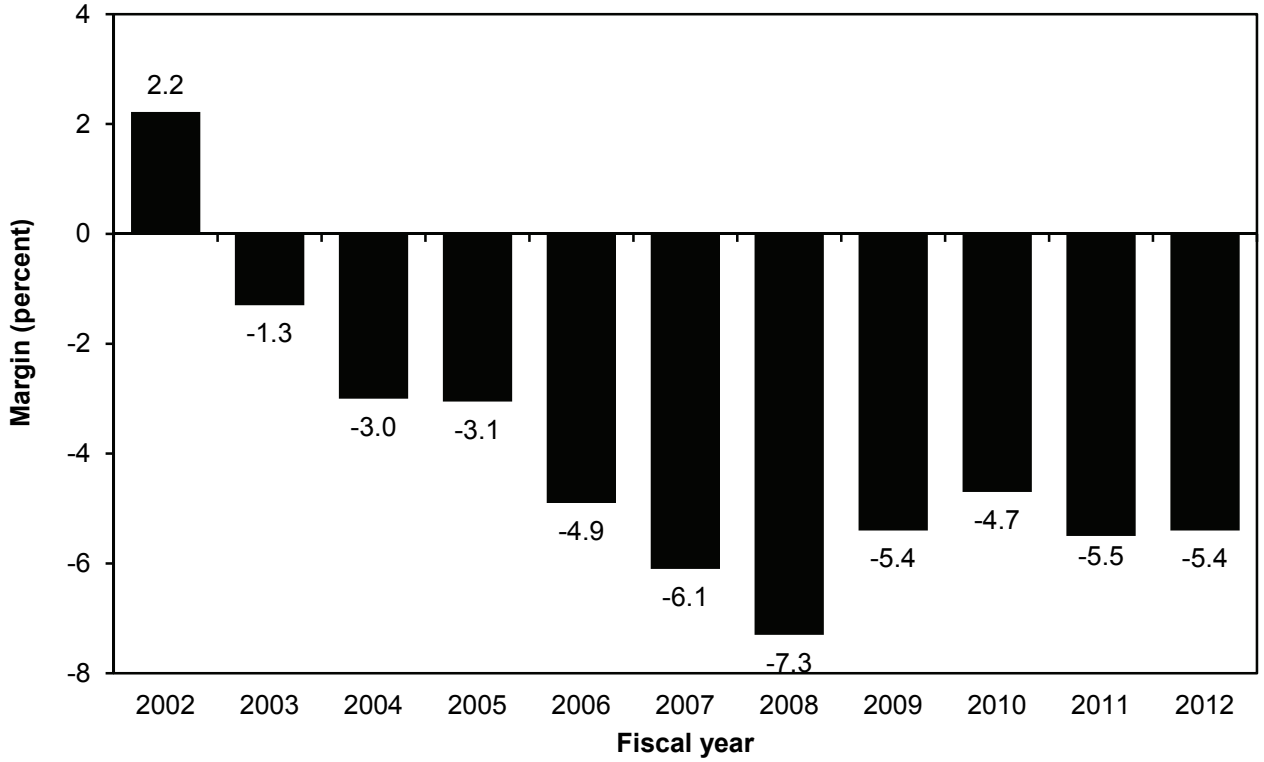
Note: PPS (prospective payment system). A margin is calculated as revenue minus costs, divided by revenue. Data are based on Medicare-allowable costs and exclude critical access hospitals. "Medicare acute inpatient PPS margin" includes services covered by the acute care inpatient PPS. Maryland hospitals are excluded from this analysis.

Source: MedPAC analysis of Medicare cost report data from CMS.

- Urban hospitals historically had higher Medicare inpatient margins than rural hospitals (not shown in chart), but the gap narrowed in 2002 and 2003. One factor in this gap was that urban hospitals had greater success in controlling cost growth, at least partly in response to pressures from managed care. From 2004 to 2012, rural hospitals' inpatient margins were slightly higher than those for urban hospitals.

- In 2012, the margins of rural and urban hospitals were –2.6 percent and –4.6 percent, respectively. The narrowing and subsequent reversal between these two groups of hospitals since 2002 was the result of payment policies targeted at raising rural hospital payments, as well as growth in the number of critical access hospitals, which removed many rural hospitals with low margins from the PPS.

Chart 6-18. Overall Medicare margin, 2002–2012



Note: A margin is calculated as revenue minus costs, divided by revenue. Data are based on Medicare-allowable costs and exclude critical access hospitals. "Overall Medicare margin" covers the costs and payments of acute inpatient, outpatient, inpatient psychiatric and rehabilitation unit, skilled nursing facility, and home health services, as well as graduate medical education and bad debts. Maryland hospitals are excluded from this analysis.

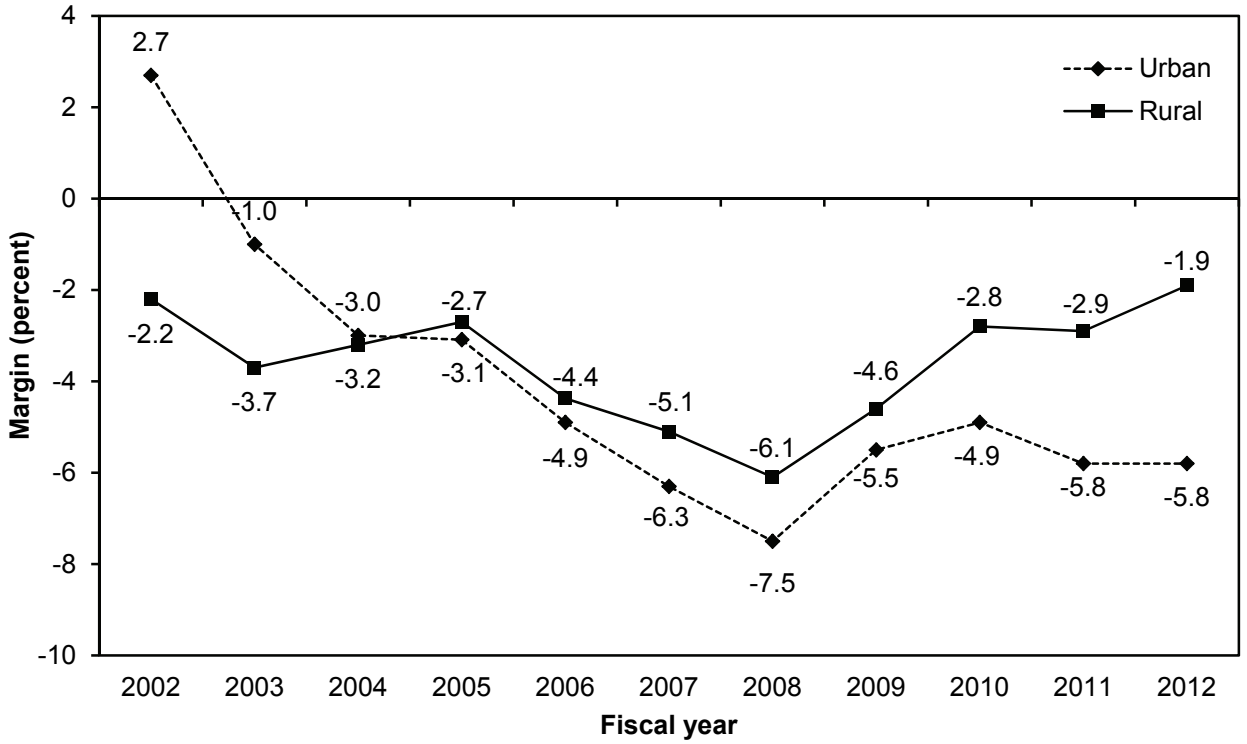
Source: MedPAC analysis of Medicare cost report data from CMS.

- The overall Medicare margin incorporates payments and costs for acute inpatient, outpatient, skilled nursing, home health care, and inpatient psychiatric and rehabilitative services, as well as direct graduate medical education and bad debts. The overall margin follows a trend similar to that for the Medicare inpatient margin.

- The overall Medicare margin in 2002 was 2.2 percent. In fiscal year 2012, it was –5.4 percent.

- In 2012, one-quarter of hospitals had overall Medicare margins of 3.4 percent or higher, and another one-quarter had margins of –18.3 percent or lower. About one-third of hospitals had positive overall Medicare margins in 2012.

Chart 6-19. Overall Medicare margin, by urban and rural location, 2002–2012



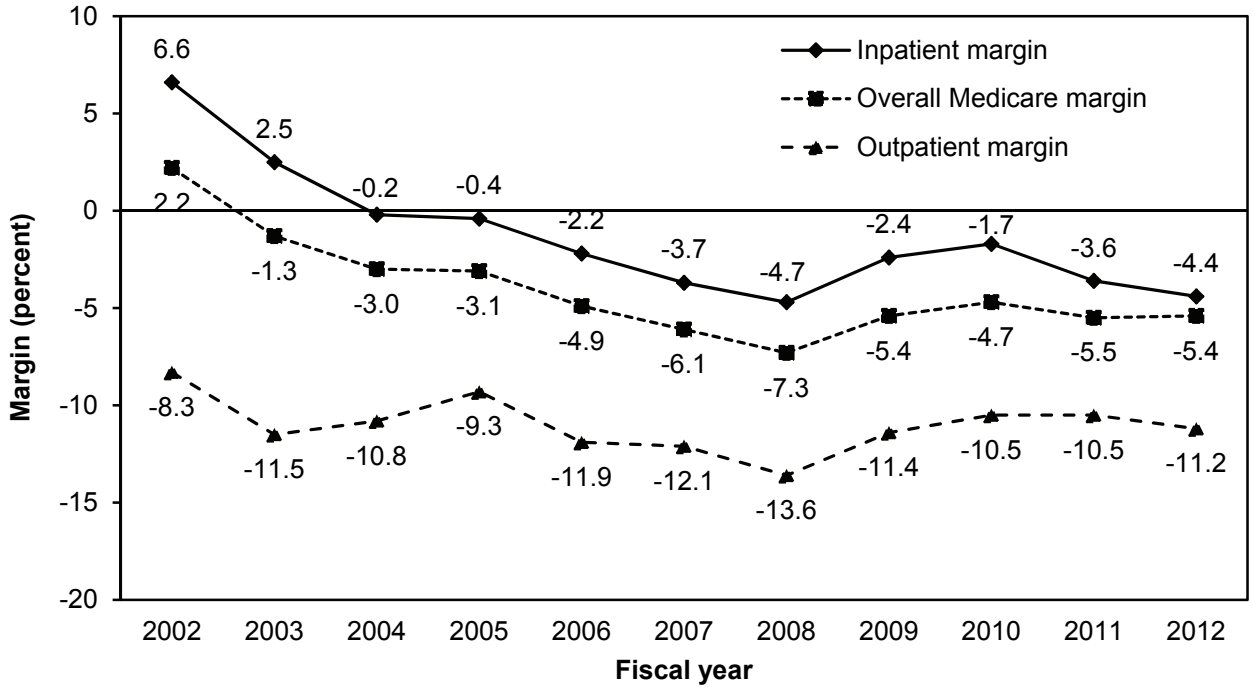
Note: A margin is calculated as revenue minus costs, divided by revenue. Data are based on Medicare-allowable costs and exclude critical access hospitals. "Overall Medicare margin" covers the costs and payments of acute hospital inpatient, outpatient, inpatient psychiatric and rehabilitation unit, skilled nursing facility, and home health services, as well as direct graduate medical education and bad debts. Maryland hospitals are excluded from this analysis.

Source: MedPAC analysis of Medicare cost report data from CMS.

- As with inpatient margins, overall Medicare margins historically were higher for urban hospitals than for rural hospitals, but since 2005, overall Medicare margins for rural hospitals have exceeded those for urban hospitals.

- The difference in overall Medicare margins between urban and rural hospitals narrowed throughout the middle of the past decade. In 2002, the overall margin for urban hospitals was 2.7 percent, compared with –2.2 percent for rural hospitals. In 2004, the overall Medicare margin for urban hospitals was –3.0 percent, compared with –3.2 percent for rural hospitals. However, since then, the overall Medicare margin for rural hospitals has been higher than for urban hospitals. Most recently, in 2012, the overall Medicare margin for urban hospitals was –5.8 percent, compared with –1.9 percent for rural hospitals. Policy changes made in the Medicare Prescription Drug, Improvement, and Modernization Act of 2003 helped to improve the relative financial position of rural hospitals. Further legislation to assist rural hospitals was implemented after 2008.

Chart 6-20. Medicare hospital outpatient, inpatient, and overall Medicare margins, 2002–2012



Note: A margin is calculated as revenue minus costs, divided by revenue. Data are based on Medicare-allowable costs. Analysis excludes critical access hospitals. "Overall Medicare margin" covers the costs and payments of hospital inpatient, outpatient, psychiatric, and rehabilitation services (not paid under the prospective payment system); hospital-based skilled nursing facilities and home health services; and graduate medical education. Maryland hospitals are excluded from this analysis.

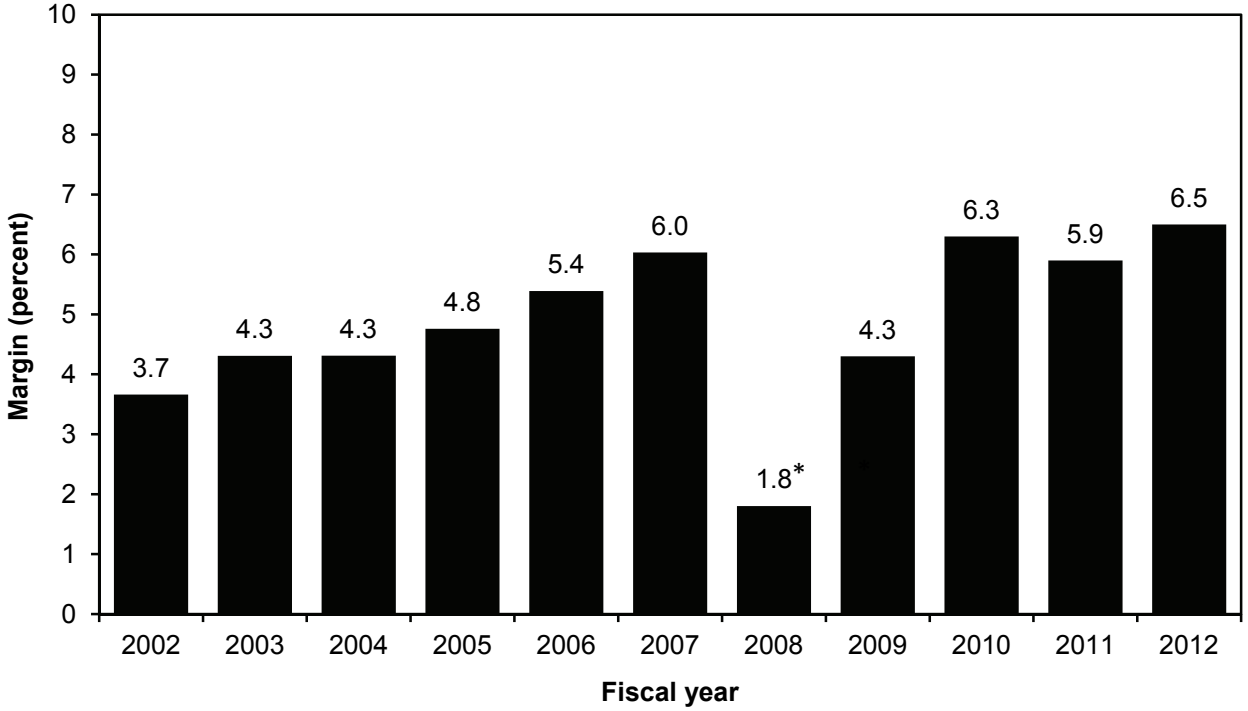
Source: MedPAC analysis of Medicare cost report data from CMS.

- In 2012, while the aggregate outpatient margin was –11.2 percent, 25 percent of hospitals had margins of –21.0 percent or lower, and 25 percent had margins of 4.2 percent or higher. Outpatient margins also differed widely across hospital categories.

- Hospitals' overhead costs are allocated across different types of services (e.g., inpatient and outpatient). Therefore, margins for hospital inpatient and outpatient services must be considered in the context of Medicare payments and hospital costs for the full range of services provided to Medicare beneficiaries, or what we refer to as the "overall Medicare margin."

- Inpatient margins are higher than outpatient margins due to indirect medical education and disproportionate share add-on payments, which increased inpatient payments by roughly 17 percent in 2012.

Chart 6-21. Hospital total all-payer margin, 2002–2012



Note: A margin is calculated as revenue minus costs, divided by revenue. "Total all-payer margin" includes all patient care services funded by all payers, plus nonpatient revenue. Analysis excludes critical access hospitals. Maryland hospitals are also excluded from this analysis.
*The significant drop in total margin includes investment losses stemming from the decline of the U.S. stock market in 2008.

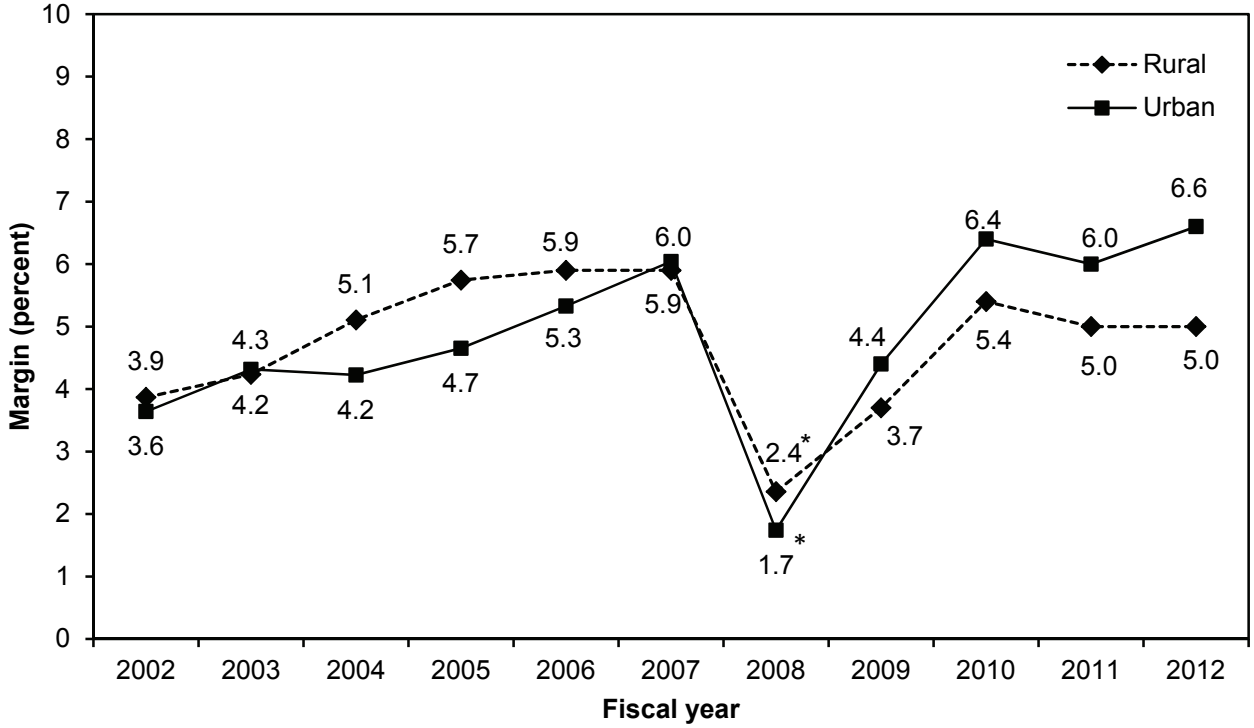
Source: MedPAC analysis of Medicare cost report data from CMS.

- The total hospital margin for all payers—Medicare, Medicaid, other government, and private payers—reflects the relationship of all hospital revenues to all hospital costs, including inpatient, outpatient, post-acute, and nonpatient services. The total margin also includes nonpatient revenue, such as investment revenue. Other types of margins we track—Medicare inpatient margin and overall Medicare margin—are operating margins that do not include investment revenue.

- From 2002 to 2007, total margins increased to the highest level in a decade. In 2008, the total margin declined to 1.8 percent. The 2008 decline of the U.S. stock market resulted in significant investment losses for hospitals, which resulted in a corresponding decline in total margin. In 2012, total margins increased slightly to 6.5 percent from 5.9 percent in 2011, reaching their highest levels since we started tracking total all-payer margins.

- In 2012, 75 percent of hospitals had positive total margins. The total margin varied much less than the Medicare inpatient or overall Medicare margin. In 2012, one-quarter of prospective payment system hospitals had total margins that were 9.9 percent or higher, while another one-quarter had margins that were zero or lower, a spread of 10 percentage points compared with a 25 percentage point interquartile spread for Medicare inpatient margins and a 22 percentage point interquartile spread for overall Medicare margins.

Chart 6-22. Hospital total all-payer margin, by urban and rural location, 2002–2012



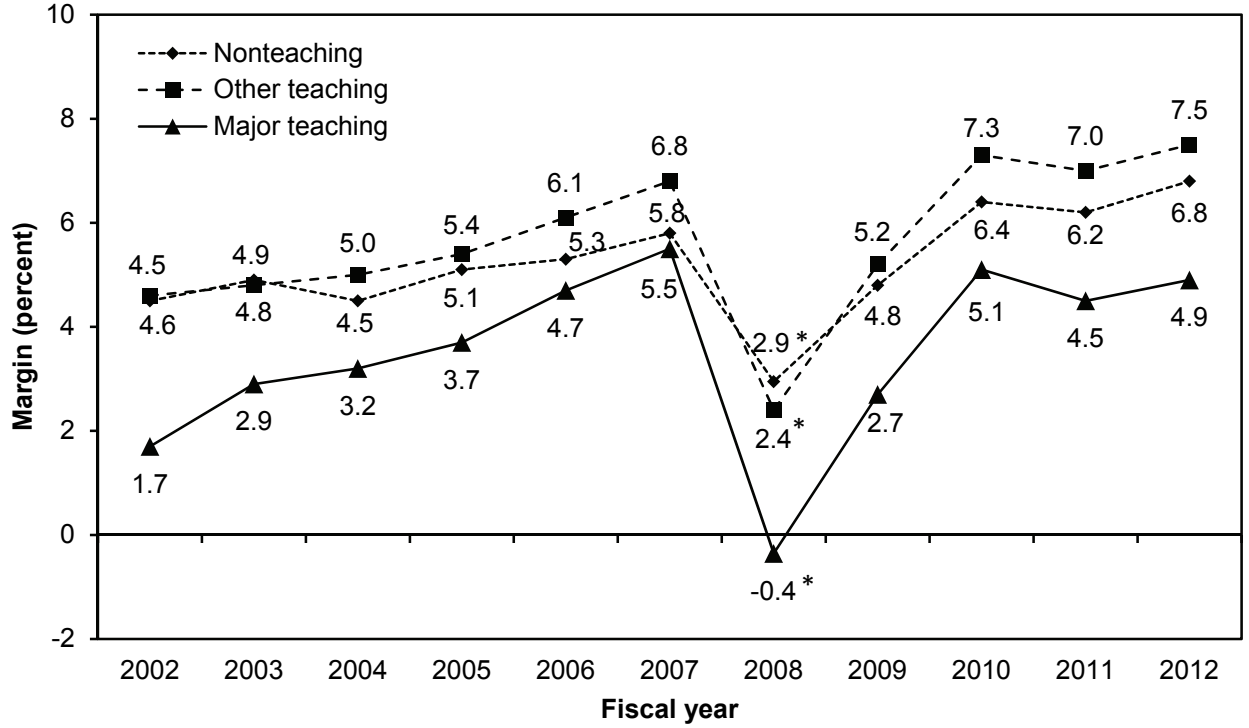
Note: A margin is calculated as revenue minus costs, divided by revenue. "Total all-payer margin" includes all patient care services funded by all payers, plus nonpatient revenue such as investment revenues. Analysis excludes critical access hospitals. Maryland hospitals are also excluded from this analysis.
* Significant drop in total margin includes investment losses resulting from the U.S. stock market decline of 2008.

Source: MedPAC analysis of Medicare cost report data from CMS.

- Since 2009, urban hospitals have had higher total (all-payer) margins than rural hospitals. In 2012, total margins were 6.6 percent for urban hospitals and 5.0 percent for rural hospitals. From 2009 to 2012, the growth in urban and rural total all-payer margins reflects low cost growth and increasing private payer reimbursement rates.

- In 2008, both rural and urban hospitals experienced their lowest level of total (all-payer) margins in the past 15 years. Hospitals' total margins include all patient care services funded by all payers, plus nonpatient revenue, such as investment revenue. The 2008 decline of the U.S. stock market resulted in significant investment losses for hospitals, which resulted in a corresponding decline in total margins. Other types of margins we track—Medicare inpatient margin and overall Medicare margin—are operating margins that do not include investment revenue.

Chart 6-23. Hospital total all-payer margin, by teaching status, 2002–2012



Note: Major teaching hospitals are defined by a ratio of interns and residents to beds of 0.25 or greater, while other teaching hospitals have a ratio of greater than 0 and less than 0.25. A margin is calculated as revenue minus costs, divided by revenue. Total margin includes all patient care services funded by all payers, plus nonpatient revenue. Analysis excludes critical access hospitals. Maryland hospitals are also excluded from this analysis.
*Significant drop in total margin includes investment losses resulting from the U.S. stock market decline of 2008.

Source: MedPAC analysis of Medicare cost report data from CMS.

- The total all-payer margins for major teaching hospitals have consistently been lower than those for other teaching and nonteaching hospitals. In 2012, the total margin for major teaching hospitals stood at 4.9 percent, compared with other teaching hospitals and nonteaching hospitals at 7.5 percent and 6.8 percent, respectively.

- Beginning in 2002, major teaching hospitals' total (all-payer) margins steadily increased, reaching 5.5 percent in 2007. However, in 2008, this trend was interrupted by a steep decline in their investment revenues, resulting in a negative total margin. Since then, total margins have recovered and remain above their historic average.

Chart 6-24. Medicare margins by teaching and disproportionate share status, 2011

Hospital group	Share of hospitals	Share of Medicare inpatient payments	Medicare inpatient margin	Overall Medicare margin
All hospitals	100%	100%	–4.4%	–5.4%
Major teaching	10	27	3.9	–2.6
Other teaching	21	32	–5.1	–5.2
Nonteaching	69	40	–9.4	–7.3
Both IME and DSH	27	55	0.2	–3.2
IME only	4	5	–14.4	–13.3
DSH only	54	33	–6.7	–5.5
Neither IME nor DSH	14	7	–21.3	–14.9

Note: IME (indirect medical education), DSH (disproportionate share). Numbers may not sum to totals due to rounding. Maryland hospitals are excluded from this analysis.

Source: MedPAC analysis of 2011 Medicare cost report data from CMS.

- By contrast with all-payer total margins, major teaching hospitals had the highest Medicare inpatient and overall Medicare margins in 2012. Their better financial performance was largely due to the additional payments they received from the IME and DSH adjustments to their inpatient payments.

- Hospitals that received neither IME nor DSH payments had the lowest Medicare margins. In 2012, the Medicare inpatient margin of these hospitals was about –21 percent, well below the margins of major teaching hospitals (3.9%) and the all-hospital average (–4.4%).

- The pattern of Medicare inpatient and overall Medicare margins by teaching status—major teaching hospitals have higher Medicare margins than other hospitals—is the opposite of the pattern for total margins by teaching status—major teaching hospitals have lower total (all-payer) margins than other hospitals (see Chart 6-22).

Chart 6-25. Financial pressure leads to lower costs

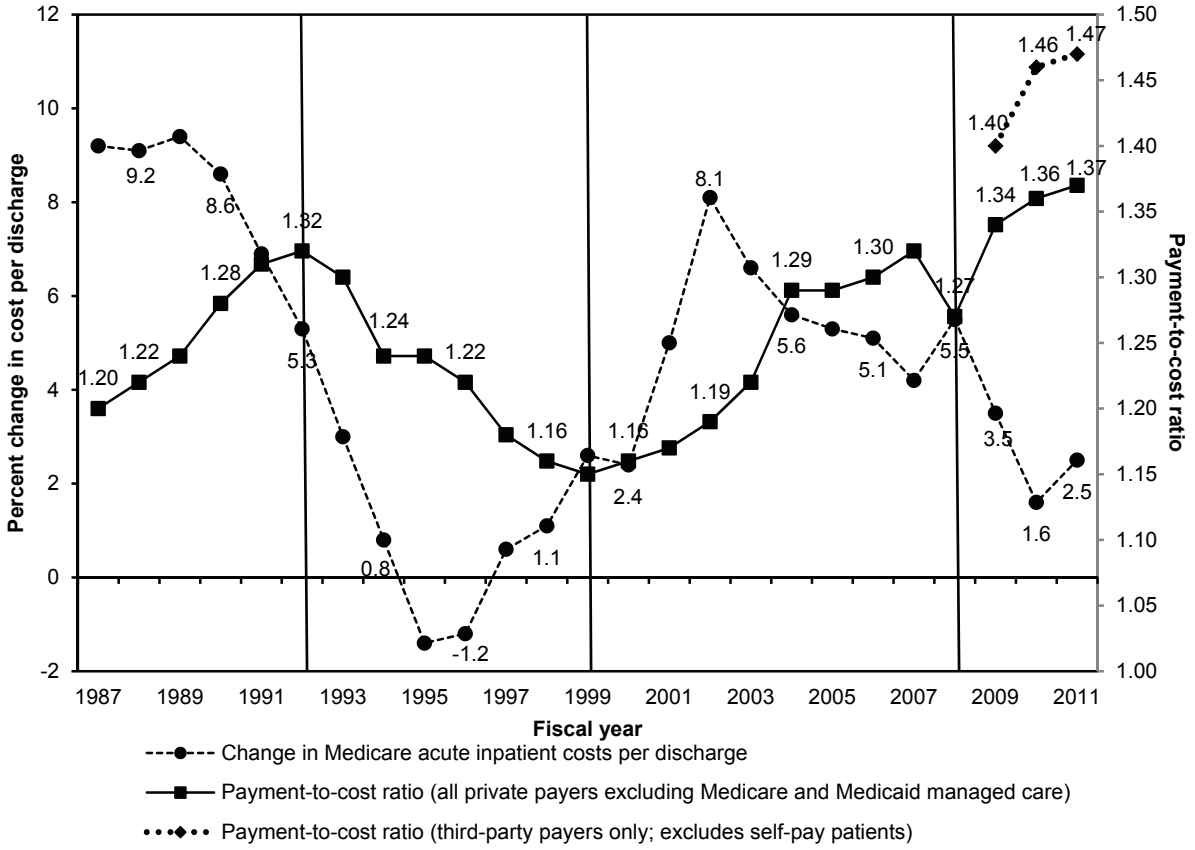
	Level of financial pressure, 2007–2011		
	High pressure (non-Medicare margin ≤ 1%)	Medium pressure	Low pressure (non-Medicare margin > 5%)
Number of hospitals	723	444	1,655
Financial characteristics, 2012 (medians)			
Non-Medicare margin (private, Medicaid, uninsured)	–1.6%	4.2%	13.0%
Standardized cost per discharge (as a share of the national median)			
For-profit and nonprofit hospitals	91	98	104
Nonprofit hospital	91	99	105
For-profit hospital	91	95	100
Annual growth in cost per discharge, 2009–2012	3%	3%	2%
Overall 2012 Medicare margin (medians)	2%	-3%	-10%
Patient characteristics (medians)			
Total hospital discharges in 2012	4,499	7,164	7,421
Medicare share of inpatient days	43%	40%	41%
Medicaid share of inpatient days	12	10	9
Medicare case-mix index	1.33	1.45	1.52

Note: Standardized costs are adjusted for hospital case mix, wage index, outliers, transfer cases, interest expense, and the effect of teaching and low-income Medicare patients on hospital costs. The sample includes all hospitals that had complete cost reports on file with CMS by October 2013. "High-pressure hospitals" are defined as those with a median non-Medicare profit margin of 1 percent or less from 2007 to 2011 and a net worth that grew by less than 1 percent per year from 2007 to 2017 if the hospital's Medicare profits had been zero. "Low-pressure hospitals" are defined as those with a median non-Medicare profit margin greater than 5 percent from 2007 to 2011 and a net worth that grew by more than 1 percent per year from 2007 to 2011 if the hospital's Medicare profits had been zero. "Medium-pressure hospitals" are those that fit into neither the high- nor the low-pressure categories.

Source: MedPAC analysis of Medicare cost report and claims files from CMS.

- Higher financial pressure tends to lead to lower standardized costs per discharge. Hospitals with lower volume, lower case mix, and higher Medicaid charges are more likely to be under financial pressure.

Chart 6-26. Change in Medicare hospital inpatient costs per discharge and private payer payment-to-cost ratio, 1987–2011

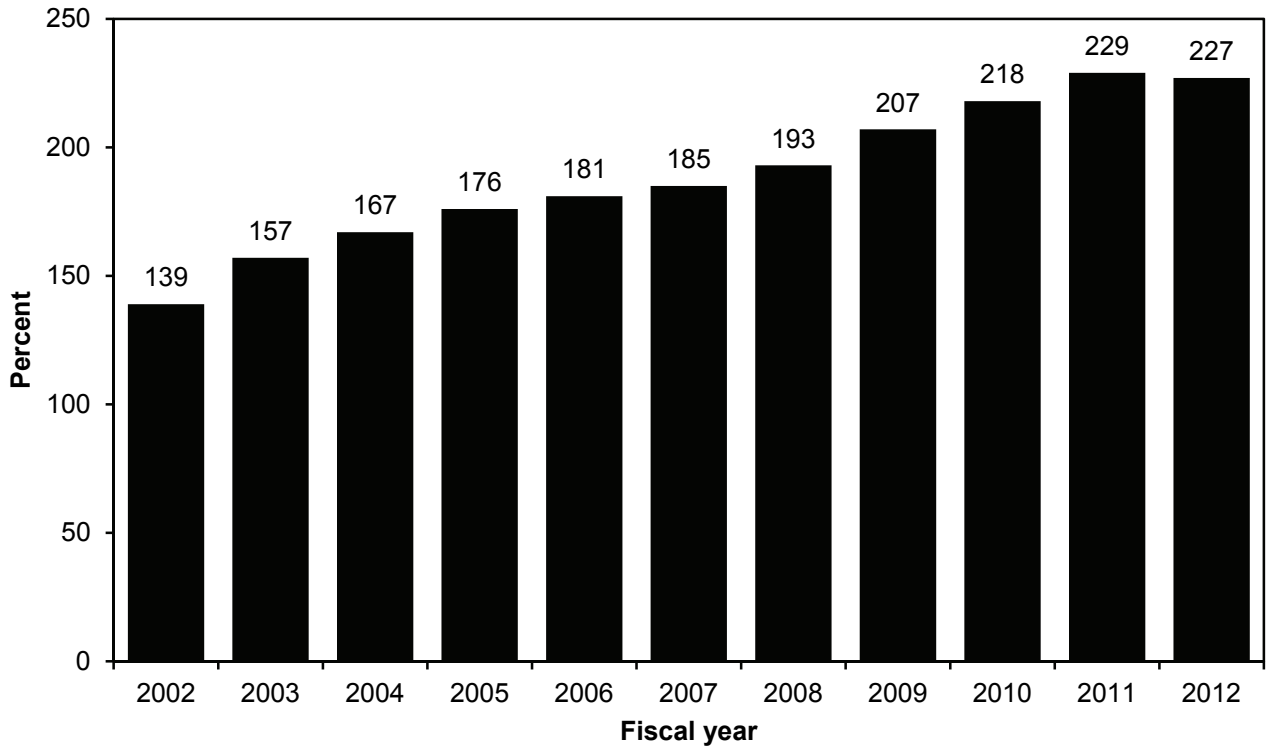


Note: Data are for community hospitals (including critical access hospitals and Maryland hospitals) and cover all hospital services. Imputed values were used for missing data (about one-third of observations). Data for 2006–2010 exclude Medicare and Medicaid managed care patients from the private payment-to-cost ratio. The private payment-to-cost ratio includes self-pay patients.

Source: MedPAC analysis of Medicare Cost Report files from CMS and CMS's rules for the acute inpatient prospective payment system and American Hospital Association Annual Survey of Hospitals.

- Changes in Medicare costs per discharge suggest that hospitals have responded to the incentives posed by the rise and fall of financial pressure from private payers over four distinct periods between 1987 and 2011.
- During the first period, 1987–1992, private payers' payments rose much faster than the cost of treating patients (seen in the chart as a steep increase in the payment-to-cost ratio). This result suggests minimal pressure from private payers. Medicare costs per discharge rose 8.3 percent per year during these years, more than 3 percentage points a year above the increase in Medicare's market basket index.
- As health maintenance organizations and other private insurers exerted more pressure during the second period, 1993–1999, the private payer payment-to-cost ratio dropped substantially. The rate of cost growth plummeted to an average of only 0.8 percent per year, which was more than 2 percentage points below the average increase in the market basket.
- As pressure from private payers waned after 1999, the private payer payment-to-cost ratio rose sharply, and hospital cost growth exceeded growth in the market basket by 2 percentage points a year. Between 2005 and 2008, the growth in the private payer payment-to-cost ratio (profit margins) slowed, and in 2008, cost growth more closely matched the market basket.
- Since 2008, cost growth has slowed. This decline is partially due to the general slowing of the economy, which has reduced input price inflation. In addition, uncertainty about economic growth in future years and enactment of laws restraining Medicare and Medicaid prices may be inducing hospitals to restrain their cost growth down to the level of input price inflation. The combination of lower annual cost growth and continued increases in private insurers' prices has resulted in increases in the profit margins on privately insured patients.

Chart 6-27. Markup of hospital charges above costs for Medicare services, 2002–2012



Note: Analysis includes all community hospitals (including critical access hospitals and hospitals in Maryland). Markups are calculated as the amount of charges over the amount of costs, minus the amount that charges equal costs (charges/costs – 1).

Source: American Hospital Association Annual Survey of Hospitals.

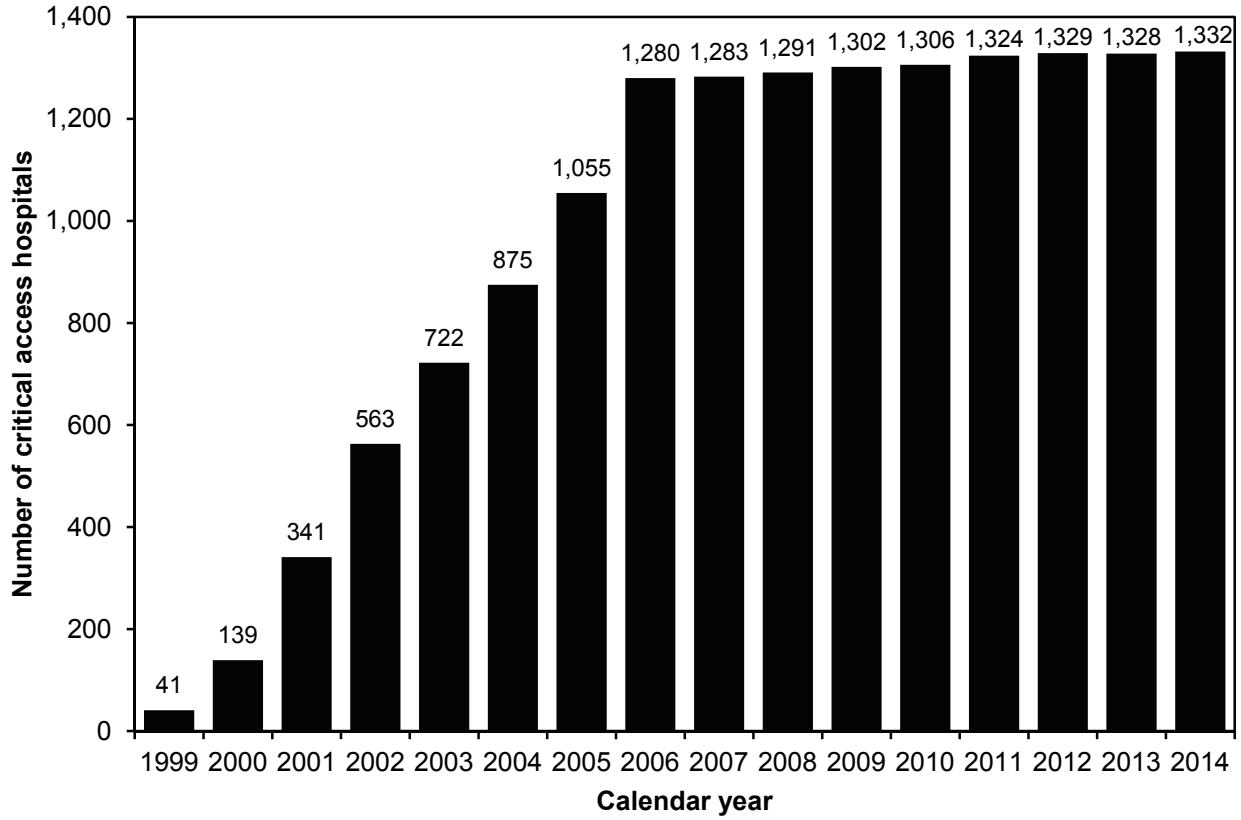
- The average markup of hospitals' charges above costs rose from about 139 percent in 2002 to 227 percent in 2012. Hospital charges ($604 billion) are now more than three times costs ($185 billion).

- Rapid growth in charges may have little impact on hospital financial performance because few patients pay full charges. However, charge growth may significantly affect uninsured patients, who may pay full charges. More rapid growth in charges (relative to growth in costs) may reflect hospitals' attempts to maximize revenue from private payers (who often structure their payments as a discount off charges). The unusually large increases in charges in 2003 and 2004 may have resulted from some hospitals manipulating Medicare outlier payments. Toward the end of fiscal year 2003, Medicare revised its outlier policy in an attempt to curb hospitals' opportunity to increase their outlier payments through excessive increases in charges.

- The markup of charges over costs is generally higher for urban hospitals (237 percent in 2012) than for rural hospitals (164 percent in 2012).

- Among urban hospitals in 2012, the markup of charges over costs was higher for for-profit hospitals (462 percent) than for nonprofit hospitals (234 percent). Rural for-profit hospitals have a higher markup of charges over costs (374 percent) than non-profit hospitals (175 percent).

Chart 6-28. Number of critical access hospitals, 1999–2014



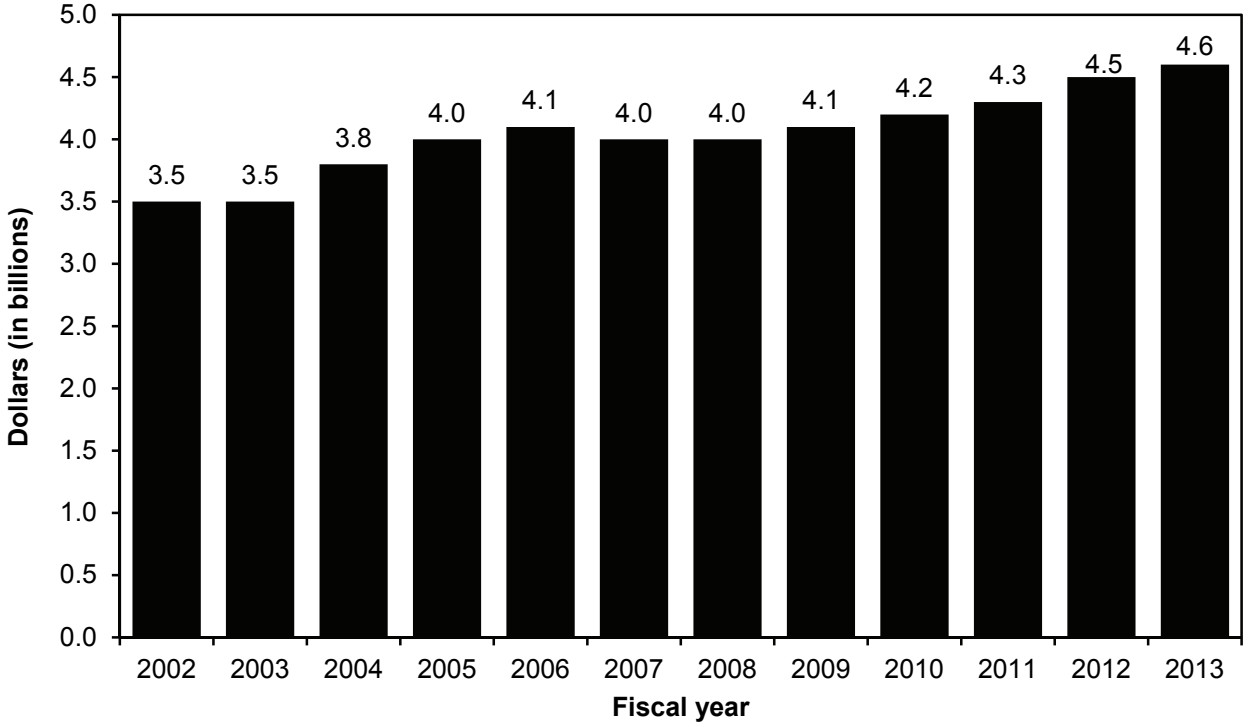
Source: The Medicare Rural Hospital Flexibility Program and CMS.

- The number of critical access hospitals (CAHs) grew rapidly from 1999 to 2006 but has since leveled off at approximately 1,300 facilities.

- The increase in CAHs between 1999 and 2006 is partly due to a series of legislative changes that made conversion to CAH status easier and expanded the services that qualify for cost-based reimbursement. Currently, CAHs are paid their Medicare costs plus 1 percent for inpatient services, outpatient services (including laboratory and therapy services), and post-acute services in swing beds.

- Before 2006, a hospital could convert to CAH status if (1) it was 35 miles by primary road or 15 miles by secondary road from the nearest hospital, or (2) the state waived the distance requirement by declaring the hospital a "necessary provider." Starting in 2006, states could no longer waive the distance requirement. While most existing CAHs fail the distance test, they are grandfathered into the program. Among small rural hospitals that have not converted, most would not meet the distance requirement. Therefore, we expect the number of CAHs to remain fairly constant going forward, absent any additional statutory changes.

Chart 6-29. Medicare payments to inpatient psychiatric facilities, 2002–2013



Source: CMS, Office of the Actuary.

- The inpatient psychiatric facility prospective payment system started January 1, 2005. The new payment system was phased in over a three-year period.
- Medicare program spending for beneficiaries' care in inpatient psychiatric facilities grew an average of 2.7 percent per year between 2002 and 2013.
- Inpatient psychiatric care furnished in scatter beds in acute care hospitals and paid under the acute care inpatient prospective payment system is not included in this chart.

Chart 6-30. Number of inpatient psychiatric facility cases increased in 2011

							Average annual change	
	2006	2007	2008	2009	2010	2011	2006–2009	2009–2011
Cases	474,417	456,045	442,759	431,276	447,897	450,655	–3.1%	2.2%
Cases per 1,000 FFS beneficiaries	13.1	12.8	12.5	12.1	12.4	12.4	–2.5	1.1
Spending per FFS beneficiary	$104.9	$106.2	$109.1	$110.3	$115.6	$118.1	1.7	3.5
Payment per case	$7,989	$8,315	$8,742	$9,080	$9,288	$9,515	4.4	2.4
Payment per day	$677	$698	$728	$763	$782	$803	4.1	2.6
Length of stay (in days)	13.0	13.0	13.1	13.1	13.0	12.7	0.3	–1.5

Note: FFS (fee-for-service). Numbers of cases and patients reflect Medicare FFS use of services furnished in inpatient psychiatric facilities (IPFs). Scatter bed cases and spending are excluded, as are cases and spending for beneficiaries enrolled in Medicare Advantage plans.

Source: MedPAC analysis of Medicare Provider Analysis and Review data from CMS.

- Between 2006 and 2009, the number of IPF cases per FFS beneficiary fell, on average, 2.5 percent per year. Between 2009 and 2011, however, the number of cases per FFS beneficiary increased 1.1 percent.

Chart 6-31. Inpatient psychiatric facilities, 2004–2011

Type of IPF	TEFRA 2004	PPS 2005	2006	2007	2008	2009	2010	2011	Average annual change 2004–2011
All	1,657	1,645	1,647	1,652	1,632	1,609	1,591	1,517	–1.3%
Urban	1,301	1,295	1,284	1,277	1,261	1,242	1,223	1,165	–1.6
Rural	356	350	363	375	371	361	368	352	–0.2
Freestanding	352	366	396	412	419	432	447	418	2.5
Hospital-based units	1,305	1,279	1,251	1,240	1,213	1,177	1,144	1,099	–2.4
Nonprofit	949	917	903	879	864	835	804	752	–3.3
For profit	327	347	348	365	357	375	386	401	3.0
Government	381	381	396	408	411	399	401	364	–0.6

Note: IPF (inpatient psychiatric facility), TEFRA (Tax Equity and Fiscal Responsibility Act of 1982), PPS (prospective payment system). CMS began a three-year phase-in of the IPF PPS on January 1, 2005. Numbers are for facilities that submitted valid Medicare cost reports in the given fiscal year.

Source: MedPAC analysis of Medicare cost report files from CMS.

- In 2011, 418 freestanding IPFs and 1,099 hospital-based psychiatric units provided inpatient-level care to Medicare beneficiaries. Since 2004, the number of psychiatric units filing Medicare cost reports has declined, on average, more than 2 percent per year. At the same time, the number of freestanding IPFs has grown, on average, 2.5 percent per year.

- A growing share of Medicare IPF users receives care in for-profit facilities. Since 2004, the number of nonprofit IPFs has fallen 3.3 percent per year, on average, compared with a 3.0 percent increase in for-profit IPFs.

Chart 6-32. One diagnosis accounted for almost three-quarters of IPF cases in 2011

MS–DRG	Diagnoses	Percentage
885	Psychosis	72.8%
057	Degenerative nervous system disorders without MCC	7.6
884	Organic disturbances and mental retardation	6.0
897	Alcohol/drug abuse or dependency, no rehabilitation, without MCC	4.3
881	Depressive neurosis	3.4
882	Neurosis except depressive	1.2
895	Alcohol/drug abuse or dependency with rehabilitation, without MCC	1.0
880	Acute adjustment reaction and psychosocial dysfunction	0.7
056	Degenerative nervous system disorders with MCC	0.6
886	Behavioral and developmental disorders	0.5
883	Disorders of personality and impulse control	0.4
894	Alcohol/drug use—left AMA	0.2
896	Alcohol/drug abuse or dependency without rehabilitation, with MCC	0.2
876	OR procedure with principal diagnosis of mental illness	0.1
081	Nontraumatic stupor and coma without MCC	0.1
887	Other mental disorders	0.1
080	Nontraumatic stupor and coma with MCC	0.0
	Nonpsychiatric MS–DRGs	0.9
	Total	100.0

Note: IPF (inpatient psychiatric facility), MS–DRG (Medicare severity–diagnosis related group), MCC (major comorbidity or complication), AMA (against medical advice), OR (operating room).

Source: MedPAC analysis of Medicare Provider Analysis and Review data from CMS.

- Medicare patients in IPFs are generally assigned to 1 of 17 psychiatric MS–DRGs.
- The most frequently occurring IPF diagnosis—accounting for about 73 percent of IPF discharges in 2011—was psychosis. In 2011, the next most common discharge diagnosis, accounting for almost 8 percent of IPF cases, was degenerative nervous system disorder.

Chart 6-33. Characteristics of IPF users, 2011

Characteristic	Share of total IPF users	Share of users with more than one IPF stay
Current eligibility status*		
Aged	41.1%	28.7%
Disabled	58.8	71.2
ESRD only	0.1	0.1
Age (years)		
<45	23.9	31.2
45–64	34.5	39.6
65–79	24.1	19.2
80+	17.5	10.1
Race		
White	78.8	76.0
African American	15.8	18.4
Hispanic	2.6	3.0
Other	2.9	2.6
All	100.0	27.9

Note: IPF (inpatient psychiatric facility), ESRD (end-stage renal disease). Numbers may not sum to totals due to rounding.
*Some aged beneficiaries are also disabled.

Source: MedPAC analysis of Medicare Provider Analysis and Review data from CMS.

- About 59 percent of Medicare beneficiaries who had at least one IPF stay in 2011 qualified for Medicare because of a disability. These beneficiaries tend to be younger and poorer than the typical fee-for-service beneficiary.
- About 28 percent of Medicare beneficiaries who used an IPF in 2011 had more than one IPF stay during the year. Beneficiaries who qualified for Medicare because of a disability were far more likely to have multiple IPF stays than other beneficiaries
- A majority of beneficiaries admitted to IPFs are dually eligible for Medicare and Medicaid. In 2011, 57 percent of Medicare beneficiaries with at least one IPF stay were dually eligible for at least one month of the year (data not shown).